

UTILIDAD REAL DE NOMOGRAMAS EN UROLOGÍA

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Nomograma

- Representación gráfica que permite realizar con rapidez cálculos numéricos aproximados.

$$\text{Probabilidad de Órgano-confinación} = 100 - [100 / (1 + e^{-z})]$$

e = número e

$$z = -3,5616 + 0,7430[\text{Estadio T1c}] + 1,6838[\text{Estadio T2a-b}] + 2,4246[\text{Estadio T2b}] + 4,5900[\text{Estadio T3a-b}] + 1,4981[\text{(Gleason 7)}] + 1,7243[\text{Gleason 8-10}] + 1,0200[\text{PSA 1,01-10}] + 1,5347[\text{PSA 10,01-20}] + 2,0595[\text{PSA 20,01-30}] + 2,9769[\text{PSA >30}]$$

PSA preop. [ng./mL.]	0 - 4	4,01 - 10	10,01 - 20	20,01 - 30	> 30
Estadio clínico					
	Suma de Gleason de la biopsia: 2 - 6				
T1a - T1b	97	93	88	82	64
T1c	94	86	78	68	46
T2a - T2b	87	70	58	45	25
T2c	76	53	40	28	14
T3a - T3b	26	11	7	4	2
	Suma de Gleason de la biopsia: 7				
T1a - T1b	89	74	63	50	29
T1c	79	57	45	32	16
T2a - T2b	59	35	23	16	7
T2c	41	20	13	8	3
T3a - T3b	7	3	2	1	0
	Suma de Gleason de la biopsia: 8 - 10				
T1a - T1b	86	69	58	44	24
T1c	75	52	39	28	13
T2a - T2b	54	30	20	13	6
T2c	36	17	11	7	3
T3a - T3b	6	?	1	1	0

Nomograma

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PSA prep. [ng./mL]	0 - 4	4,01 - 10	10,01 - 20	20,01 - 30	> 30
Estadio clínico	Suma de Gleason de la biopsia: 2 - 6				
T1a - T1b	97	93	88	82	64
T1c	94	86	78	68	46
T2a - T2b	87	70	58	45	25
T2c	76	53	40	28	14
T3a - T3b	26	11	7	4	2
Suma de Gleason de la biopsia: 7					
T1a - T1b	89	74	63	50	29
T1c	79	57	45	32	16
T2a - T2b	59	35	23	16	7
T2c	41	20	13	8	3
T3a - T3b	7	3	2	1	0
Suma de Gleason de la biopsia: 8 - 10					
T1a - T1b	86	69	58	44	24
T1c	75	52	39	28	13
T2a - T2b	54	30	20	13	6
T2c	36	17	11	7	3
T3a - T3b	6	?	1	1	0

TABLA I. Probabilidad de órgano-confinación tumoral (pT2).

Nomogramas en Urología

Requisitos

Calibración

Discriminación

Utilidad clínica

Tipos

Diagnóstico

De estadificación

Pronóstico

Nomogramas en Urología: Cáncer de vejiga no músculo invasivo.

- Nuevos diagnósticos 75-85% no invaden la capa muscular.
- Riesgo de recurrencia y progresión.

Risk category	Definition
Low-risk tumours	Primary, solitary, TaG1 (PUNI MP, LG ^b), < 3 cm, no carcinoma <i>in situ</i> (CIS)
Intermediate risk tumours	All tumours not defined in the two adjacent categories (between the category of low- and high-risk).
High-risk tumours	Any of the following: <ul style="list-style-type: none">• T1 tumour;• G3 (HG^{**}) tumour;• CIS;• Multiple, recurrent and large (> 3 cm) TaG1G2/LG tumours (all features must be present).
Subgroup of highest-risk tumours	T1G3/HG associated with concurrent bladder CIS, multiple and/or large T1G3/HG and/or recurrent T1G3/HG, T1G3/HG with CIS in the prostatic urethra, some forms of variant histology of urothelial carcinoma, lymphovascular invasion.
BCG failures	

Nomogramas en Urología: Cáncer de vejiga no músculo invasivo.

- EORTC (European Organisation for Research and Treatment of Cancer).
 - ▣ Risk Tables for Predicting Recurrence and Progression in Individual Patients with Stage Ta T1 Bladder Cancer.

Al año
Recurrencia 15-61%
Progresión 1-17%

A los 5 años
Recurrencia 31-78%
Progresión 1-45%



Bladder Cancer

Predicting Recurrence and Progression in Individual Patients with Stage Ta T1 Bladder Cancer Using EORTC Risk Tables: A Combined Analysis of 2596 Patients from Seven EORTC Trials

Richard J. Sylvester^{a,*}, Adrian P.M. van der Meijden^b, Willem Oosterlinck^c,
J. Alfred Witjes^d, Christian Bouffoux^e, Louis Denis^{f,g}, Donald W.W. Neuling^{g,h},
Karlheinz Kurth^{k,j}

EORTC Risk Tables for Predicting Recurrence and Progression in Individual Patients with Stage Ta T1 Bladder Cancer

Factor	Recurrence	Progression
Number of tumours		
Single	0	0
2-7	3	3
≥ 8	6	3
Tumour diameter		
< 3 cm	0	0
> 3	3	3
Prior recurrence rate		
Primary	0	0
≤ 1 recurrence/year	2	2
> 1 recurrence/year	4	2
Category		
Ta	0	0
T1	1	4
Concurrent CIS		
No	0	0
Yes	1	6
Grade		
G1	0	0
G2	1	0
G3	2	5
Total Score	0-17	0-23

Recurrence score	Probability of recurrence at 1 year		Probability of recurrence at 5 years	
	%	(95% CI)	%	(95% CI)
0	15	(10-19)	31	(24-37)
1-4	24	(21-26)	46	(42-49)
5-9	38	(35-41)	62	(58-65)
10-17	61	(55-67)	78	(73-84)

Progression score	Probability of progression at 1 year		Probability of progression at 5 years	
	%	(95% CI)	%	(95% CI)
0	0.2	(0-0.7)	0.8	(0-1.7)
2-6	1	(0.4-1.6)	6	(5-8)
7-13	5	(4-7)	17	(14-20)
14-23	17	(10-24)	45	(35-55)

Sylvester, R.J., et al. Predicting recurrence and progression in individual patients with stage Ta T1 bladder cancer using EORTC risk tables: a combined analysis of 2596 patients from seven EORTC trials. Eur Urol, 2006. 49: 466.

EORTC Risk Tables for Predicting Recurrence and Progression in Individual Patients with Stage Ta T1 Bladder Cancer

EORTC Risk Tables For Stage Ta T1 Bladder Cancer

EORTC Risk Tables for Stage Ta T1 Bladder Cancer

Prior Recurrence Rate	Number of Tumors	Tumor Diameter
<input checked="" type="radio"/> Primary <input type="radio"/> Recurrent <= 1 per year <input type="radio"/> Recurrent > 1 per year	<input checked="" type="radio"/> 1 <input type="radio"/> 2 to 7 <input type="radio"/> 8 or more	<input checked="" type="radio"/> < 3 cm <input type="radio"/> >= 3 cm
T Category	Grade (WHO 1973)	Concomitant CIS
<input checked="" type="radio"/> Ta <input type="radio"/> T1	<input checked="" type="radio"/> G1 <input type="radio"/> G2 <input type="radio"/> G3	<input checked="" type="radio"/> No <input type="radio"/> Yes

Calculate Probabilities Clear Exit

1 Year 2 Years 3 Years 4 Years 5 Years

Probability of Recurrence
Probability of Progression

Reference: Sylvester RJ, van der Meijden APM, Oosterlinck W, Witjes JA, Bouffoux C, Denis L, Newling DW, Kurth KH. Predicting recurrence and progression in individual patients with stage Ta T1 bladder cancer using EORTC risk tables: A combined analysis of 2596 patients from 7 EORTC trials. European Urology 43: 466-477, 2006.

Programmed by Richard Sylvester, EORTC Data Center, 03 avenue Mounier, 1200 Brussels, Belgium.

Version 1.0, January 2006

- <http://www.eortc.be/tools/bladdercalculator/>

Modelo CUETO de puntuación (Predicción de recurrencia y Progresión de Tumor Vesical No Músculo-Invasivo tratado con Bacilo de Calmette-Guerin).



The Journal of Urology

Volume 182, Issue 5, November 2009, Pages 2195-2203

Adult Urology

Oncology: Adrenal/Renal/Upper Tract/Bladder

Predicting Nonmuscle Invasive Bladder Cancer Recurrence and Progression in Patients Treated With Bacillus Calmette-Guerin: The CUETO Scoring Model

Jesus Fernandez-Gomez^{a,b}, Rosario Madero^b, Eduardo Solsona^f, Miguel Linda^g, Luis Martinez-Pineiro^c, Marcelino Gonzalezⁱ, Jose Portillo^j, Antonio Ojea^k, Carlos Perfusa^h, Jesus Rodriguez-Molina^e, Jose Emilio Camacho^l, Mariano Rabadian^d, Ander Astobiza^m, Manuel Montesinosⁿ, Santiago Isorna^o, Pedro Muntanola^p, Anabel Gimeno^q, Miguel Blas^r, Jose Antonio Martinez-Pineiro^c

Fernandez-Gomez, J., et al. Predicting nonmuscle invasive bladder cancer recurrence and progression in patients treated with bacillus Calmette-Guerin: the CUETO scoring model. J Urol, 2009. 182: 2195.

PREDICCIÓN DE RECURRENCIA Y PROGRESIÓN DE TUMOR VESICAL NO MUSCULO INVASIVO TRATADO CON BACILO DE CALMETTE GUERIN: EL MODELO CUETO DE PUNTUACIÓN			
Factor	Puntuación		
	Recurrencia	Progresión	
Sexo	<input checked="" type="radio"/> Hombre	0	0
	<input type="radio"/> Mujer	3	0
Edad (años)	<input checked="" type="radio"/> Menor que 60	0	0
	<input type="radio"/> De 60 a 70	1	0
	<input type="radio"/> Mayor que 70	2	2
Tumor reciente	<input checked="" type="radio"/> No	0	0
	<input type="radio"/> Si	1	2
Nº tumores	<input checked="" type="radio"/> Menor o igual a 3	0	0
	<input type="radio"/> Mayor que 3	2	1
Categoría T	<input checked="" type="radio"/> Ta	0	0
	<input type="radio"/> T1	0	2
Tis asociado	<input checked="" type="radio"/> No	0	0
	<input type="radio"/> Si	2	1
Graado	<input checked="" type="radio"/> G1	0	0
	<input type="radio"/> G2	1	2
	<input type="radio"/> G3	3	6
Puntuaciones totales		0	0

Probabilidad de recurrencia y progresión a 1, 2 y 5 años por puntuación total		
Tiempo	Recurrencia (0-4)	Progresión (0-4)
	Prob. I.C. 95% (%) (L. Inf-L. Sup)	Prob. I.C. 95% (%) (L. Inf-L. Sup)
1 año	8.24 (5.91-10.57)	1.17 (0.15-2.19)
2 años	12.60 (9.76-15.44)	2.16 (0.77-3.55)
5 años	20.98 (17.33-24.63)	3.76 (1.90-5.62)

EORTC Nomograms and Risk Groups for Predicting Recurrence, Progression, and Disease-specific and Overall Survival in Non-Muscle-invasive Stage Ta-T1 Urothelial Bladder Cancer Patients Treated with 1-3 Years of Maintenance Bacillus Calmette-Guérin.

- Los pacientes NMIBC tratados con 1-3 años de mantenimiento con BCG tienen un pronóstico heterogéneo.
- Los pacientes con alto riesgo de recurrencia y / o progresión tienen un rendimiento bajo en los programas de mantenimiento actualmente recomendados.
- Se requieren tratamientos alternativos con urgencia.

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journal homepage: www.europeanurology.com



Platinum Priority – Bladder Cancer
Editorial by Peter C. Black on pp. 70–71 of this issue

EORTC Nomograms and Risk Groups for Predicting Recurrence, Progression, and Disease-specific and Overall Survival in Non-Muscle-invasive Stage Ta-T1 Urothelial Bladder Cancer Patients Treated with 1–3 Years of Maintenance Bacillus Calmette-Guérin

Samantha Cambier^{a,c}, Richard J. Sylvester^{a,*}, Laurence Collette^b, Paolo Gontijo^b, Maurizio A. Rennert^c, George van Andel^d, Wim J. Kirkels^f, Fernando Calais-De Silva^f, Willem Oosterlinck^e, Stephen Prescott^e, Ziya Kirkali^g, Philip H. Powell^j, Theo M. de Reijke^k, Levent Turkeriⁱ, Sandra Collette^b, Jorg Oddens^m

EAU Guidelines on Non-muscle-invasive Bladder Cancer (TaT1 and CIS)

M. Babjuk (Chair), M. Burger (Vice-Chair), E. Compérat,
P. Gontero, A.H. Mostafid, J. Palou, B.W.G. van Rhijn,
M. Rouprêt, S.F. Shariat, R. Sylvester, R. Zigeuner
Guidelines Associates: O. Capoun, D. Cohen,
V. Herrández, V. Soukup

Recommendations	GR
Apply the EORTC risk tables and calculator for the prediction of the risk of tumour recurrence and progression in different intervals after transurethral resection of the bladder, in individual patients.	B
Use the CUETO risk tables and the new EORTC risk groups for the prediction of the risk of tumour recurrence and progression in individual patients treated with bacillus Calmette-Guérin.	B

Nomogramas predictivos de recurrencia y progresión de Cáncer vesical no músculo invasivo

- Pueden ayudar en el proceso de toma de decisiones y potencialmente mejorar los resultados clínicos de los pacientes con Cáncer vesical no músculo invasivo.

Nomogramas predictivos de recurrencia y progresión de Cáncer vesical no músculo invasivo

- Pueden ayudan en el proceso de toma de decisiones y potencialmente mejorar los resultados clínicos de los pacientes con Cáncer vesical no músculo invasivo.
- Lammers et al. reportó que estos modelos proporcionaron un bajo VPP para progresión, especialmente en la enfermedad de alto grado (EORTC: 21%, CUETO: 24%).



Urologic Clinics of North America

Volume 40, Issue 2, May 2013, Pages 155-164



NMIBC Risk Calculators: How Useful Are They for the Practicing Urologist and How Can Their Clinical Utility Be Improved?

Rianne J.M. Lammers MD ^a, Richard J. Sylvester ScD ^b, Cheryl T. Lee MD ^c, J. Alfred Witjes MD, PhD ^{a, b, c}

Nomogramas predictivos de recurrencia y progresión de Cáncer vesical no músculo invasivo

- Pueden ayudan en el proceso de toma de decisiones y potencialmente mejorar los resultados clínicos de los pacientes con Cáncer vesical no músculo invasivo.
- Lammers et al. reportó que estos modelos proporcionaron un bajo VPP para progresión, especialmente en la enfermedad de alto grado (EORTC: 21%, CUETO: 24%).
- Xylinas et al., han validado externamente la utilidad de ambos modelos (cohorte multicéntrica de 4689 pacientes), indicando que las tablas de riesgo de EORTC y el modelo de puntuación CUETO mostraron una discriminación deficiente para recurrencias (índices c 0.597 y 0.523) y progresión (índices c 0.662 y 0.616). Ambos modelos sobreestimaron el riesgo de progresión, especialmente en pacientes NMIBC de alto riesgo.



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NMIBC Risk Calculators: How Useful Are They for the Practicing Urologist and How Can Their Clinical Utility Be Improved?

Rianne J.M. Lammers MD ^a, Richard J. Sylvester ScD ^b, Cheryl T. Lee MD ^c, J. Alfred Witjes MD, PhD ^{a, b, c}

Journal List • Br J Cancer • NBB • 2013 Sep 17 • PMC377672



BJC Cases. 2013 Sep 17; 109(8): 1460-1466
Published online 2013 Aug 27. doi: 10.1038/bjc.2013.372

PMID: PMC377672

Accuracy of the EORTC risk tables and of the CUETO scoring model to predict outcomes in non-muscle-invasive urothelial carcinoma of the bladder

E.Xylinas ^{1,2}, M.Kari ², L.Kluth ^{1,2}, A.Pycha ³, F.Compoli ⁴, H.S.Savat ⁵, Y.Lotan ⁶, Q-Q.Triki ⁷, P.J.Karakiewicz ⁷, S.Hinman ⁸, D.G.Schoen ⁹, M.Zenoh ², A.J.Vickers ³ and S.C.Shariat ^{1,3,10}

Cáncer de Próstata. Índice de Comorbilidad de Charlson

Number of points	Conditions
1 point	50-60 years
	Myocardial infarction
	Heart failure
	Peripheral vascular insufficiency
	Cerebrovascular disease
	Dementia
	Chronic lung disease
	Connective tissue disease
	Ulcer disease
	Mild liver disease
2 points	Diabetes
	61-70 years
	Hemiplegia
	Moderate to severe kidney disease
	Diabetes with organ damage
3 points	Tumours of all origins
	71-80 years
	Moderate to severe liver disease
4 points	81-90 years
	> 90 years
5 points	Metastatic solid tumours
	AIDS

Recommendations

Offer an individualised risk-adapted strategy for early detection to a well-informed man with a good performance status and a life-expectancy of at least ten to fifteen years.

Decide on the age at which early diagnosis of PCa should be stopped based on life expectancy and performance status; men who have a life-expectancy of < 15 years are unlikely to benefit.

LE GR



3 points
Charlson Comorbidity Index

77 %
Estimated 10-year survival

[Copy Results](#) [Next Steps](#)

<https://www.mdcalc.com/charlson-comorbidity-index-cci>

-Mottet, N., et al. EAU-ESTRO-SIOG guidelines on prostate cancer. Part 1: screening, diagnosis, and local treatment with curative intent. *European urology*, 2017, vol. 71, no 4, p. 618-629.

-Charlson, M.E., et al. A new Method of Classifying Prognostic Comorbidity in Longitudinal Studies: Development and Validation. *Journal of Chronic Diseases* 40:373-383

Esperanza de vida a los 10-15 años específica para Cáncer de Próstata



WebCore

WebCore Expectancy Survey

Section 1: Heart Disease

Have you ever been treated for a problem with your heart, or have been treated for heart disease, chest pain or angina?

Section 2: Pulmonary Assessment

Asthma

Have you ever been diagnosed with asthma?

COPD

Do you suffer from "smoker's lung" or have been diagnosed with chronic obstructive pulmonary disease (COPD) or emphysema?

Section 3: Vascular Related Conditions Assessment

Abdominal Aorta Aneurysm

Have you ever been diagnosed with an abdominal aorta aneurysm, or been told that you have a widening of a major artery in your abdomen?

Peripheral Vessel Disease

Have you ever suffered pain in your legs related to poor circulation, or have been diagnosed with peripheral vascular disease or claudication?

Deep Vein Thrombosis

Have you ever had a deep venous thrombosis, or have been treated with blood thinners for blood clots in your legs or arms?

Pulmonary Embolism

Have you ever suffered from a blood clot in your lungs or in pulmonary embolism?

Section 4: Additional Comorbidity Questions

Smoking

Have you smoked >100 cigarettes in your lifetime?

Cholesterol

Do you know, approximately, what your level of total cholesterol is? If you are taking pills for your cholesterol, tell us about your cholesterol when you are on the pills.

High (>200 mg/dL) Medium (160-200 mg/dL) Normal (<200 mg/dL) Not sure

Do you know approximately what your level of HDL ("good") cholesterol?

Extremely low (<20 mg/dL) Low (21-40 mg/dL) Normal (>40 mg/dL) Not sure

Blood Pressure

What is your average systolic blood pressure as one number, over, under, equal to, plus minus - or you know your blood pressure, approximately, total as one final pregnancy number? If you are taking pills for your blood pressure, tell us about your blood pressure when you are on the pills.

High (>160 mm Hg) Elevated (140-160 mm Hg) Normal/Low (<140 mm Hg) Not sure

What is the second (diastolic) number?

High (>+ 100 mm Hg) Elevated (90-100 mm Hg) Normal/Low (<90 mm Hg) Not sure

Diabetes

Have you ever been diagnosed with diabetes?

TIA

Have you ever suffered from a "mini stroke" or a TIA or been treated with blood thinners for a "mini stroke"?

Stroke

Have you ever had a stroke?

Section 5: Prostate Cancer

Patient Info

Age (18-90) Select *

T Stage Select *

N Stage No evidence of metastasis N0 *

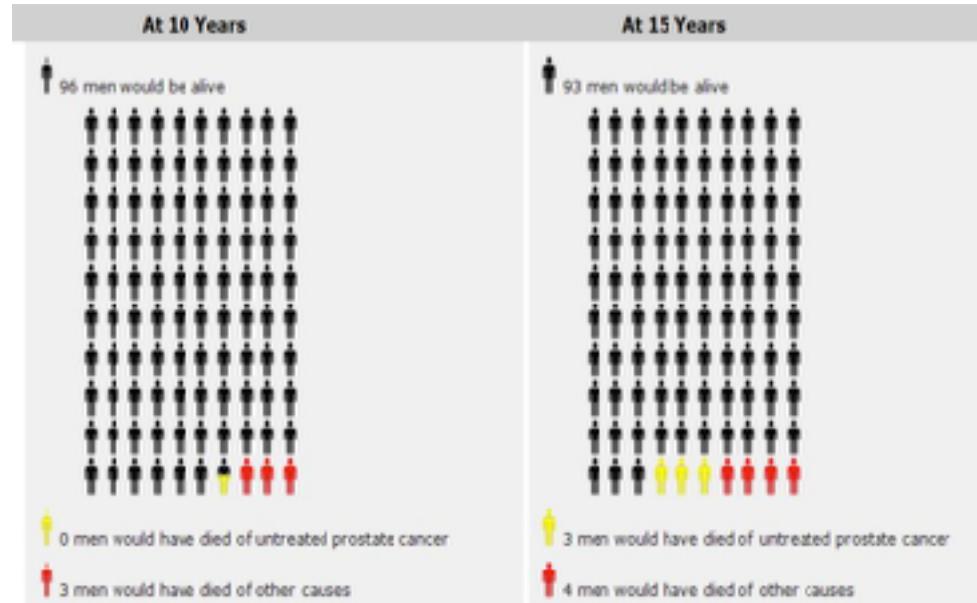
M Stage No evidence of cancer in lymph nodes M0 *

Grade Select *

PSA (0-100)



Memorial Sloan Kettering
Cancer Center



[https://webcore.mskcc.org/survey/surveyform.aspx?
&preview=true&excelsurveylistid=4](https://webcore.mskcc.org/survey/surveyform.aspx?&preview=true&excelsurveylistid=4)

Cáncer de Próstata



- Las calculadoras de riesgos pueden ser útiles para ayudar a determinar de forma individual el riesgo potencial de cáncer, reduciendo así la cantidad de biopsias innecesarias.
 - PCPTRC 2.0.
 - ERSCP

Mottet, N., et al. EAU-ESTRO-SIOG guidelines on prostate cancer. Part 1: screening, diagnosis, and local treatment with curative intent. *European urology*, 2017, vol. 71, no 4, p. 618-629.

Cáncer de Próstata

- Prostate Cancer Prevention Trial Risk Calculator Version
 - Seguimiento de 5519 hombre durante 7 años.
 - PSA <3ng/ml.
 - Tacto rectal y PSA anual.
 - Biopsia prostática transrectal a los 7 años.
 - Conclusión: El PSA, los antecedentes familiares, los hallazgos del DRE y los antecedentes de una biopsia de próstata negativa previa proporcionaron un valor predictivo independiente para el cálculo del riesgo de una biopsia que mostró presencia de cáncer.

Cáncer de Próstata

□ Prostate Cancer Prevention Trial Risk Calculator Version 2.0

El riesgo de cáncer de la próstata si se procediera con una biopsia

En base a los factores de riesgo previos, proceder con una biopsia de la próstata contiene:

un 10% de probabilidad de cáncer en la próstata de alto grado.

un 21% de probabilidad de cáncer en la próstata de bajo grado.

un 58% de probabilidad de que la biopsia no demuestre cáncer.

Aproximadamente de un 2 a 1% de hombres que se someten a una biopsia sufrirán de una infección que puede que requiera hospitalización.

Por favor, consulte con su médico acerca de estos resultados.



Raza

Edad

Nivel de PSA [ng/ml]

Historia familiar de Cáncer de Próstata

Examen Rectal Digital

Biopsia Prostática Previa

Porcentaje de PSA libre disponible?

PCA3 disponible?

T2:ERG disponible?

Calcular el riesgo

Schmitz-Dräger, B.J., et al. The Prostate Cancer Prevention Trial (PCPT). Relevance for clinical practice. Urologe A. 2007 Oct;46(10):1364, 1366-8, 1370.

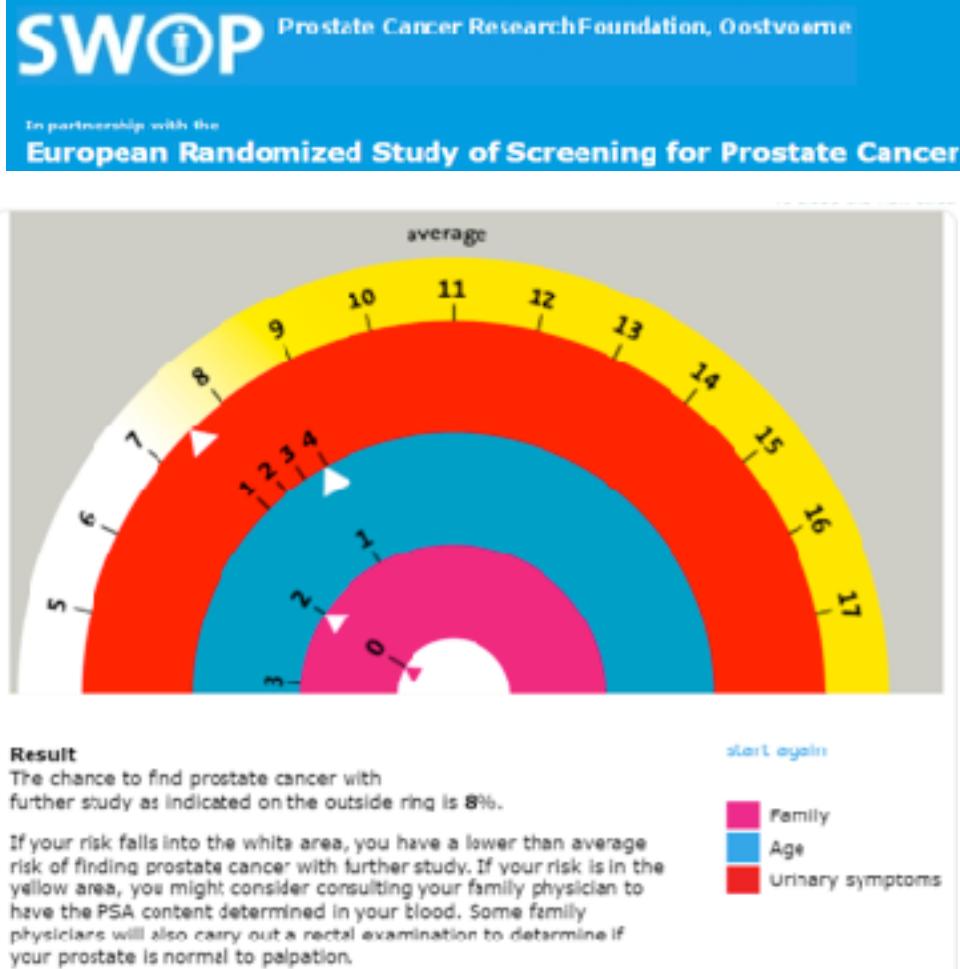
<http://myprostatecancerrisk.com/>

Cáncer de Próstata

- **European Randomised Study of Screening for Prostate Cancer (ERSPC) risk calculators significantly outperform the Prostate Cancer Prevention Trial (PCPT) 2.0 in the prediction of prostate cancer: a multi-institutional study.**
- **Conclusiones:** El rendimiento de las calculadoras de riesgo en la presente cohorte muestra que ERSPC-RC es una herramienta superior en la predicción del CaP; sin embargo el rendimiento del ERSPC-RC en esta población aún no justifica su uso en la práctica clínica.

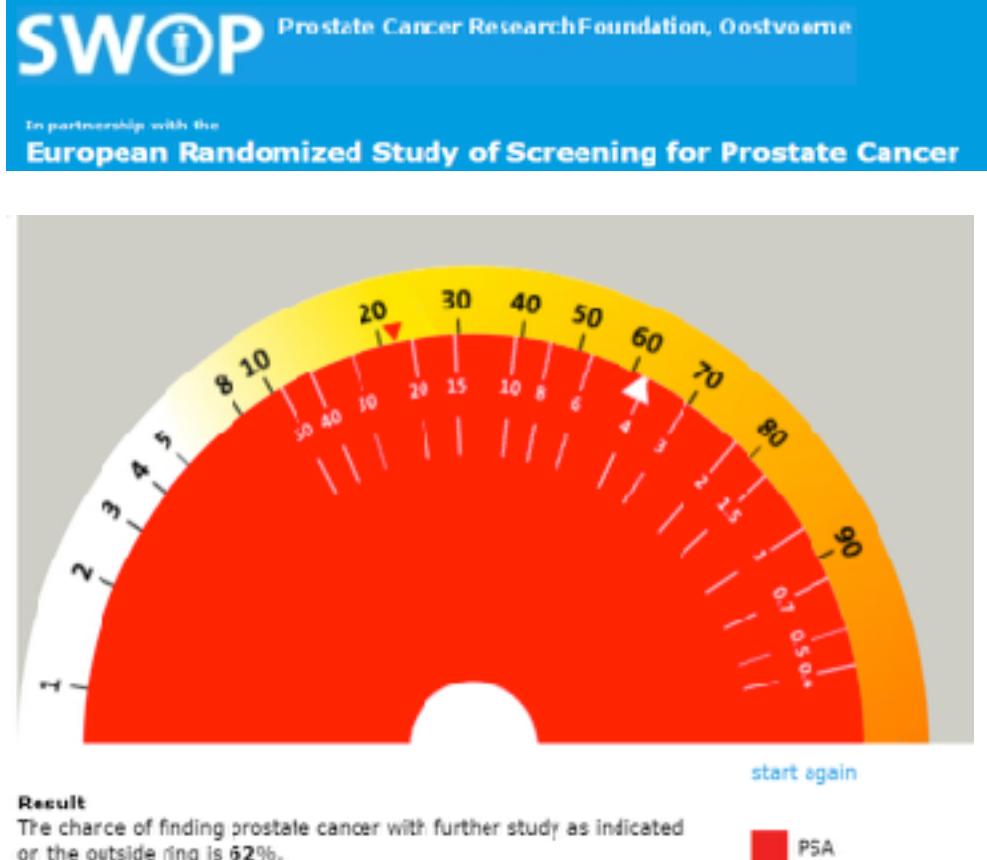
Foley, R.W., et al. European Randomised Study of Screening for Prostate Cancer (ERSPC) risk calculators significantly outperform the Prostate Cancer Prevention Trial (PCPT) 2.0 in the prediction of prostate cancer: a multi-institutional study. *BJU Int.* 2016 Nov;118(5):706-713. doi: 10.1111/bju.13437. Epub 2016 Feb 29.

Cáncer de Próstata



- Calculador de riesgo 1.
- Probabilidad de Ca de Próstata según datos clínicos.

Cáncer de Próstata



- Calculador de riesgo 2.
- Probabilidad de Ca de Próstata mediante la cuantificación del PSA.

Cáncer de Próstata

SWOP Prostate Cancer Research Foundation, Ostvoome

In partnership with the
European Randomized Study of Screening for Prostate Cancer

What is your PSA level, in ng/mL?
Value should be between 0.4 and 50.

Did you have a previous negative prostate biopsy?
 Yes No

Did you recently have a DRE (within the last 6 months)?
 Yes No

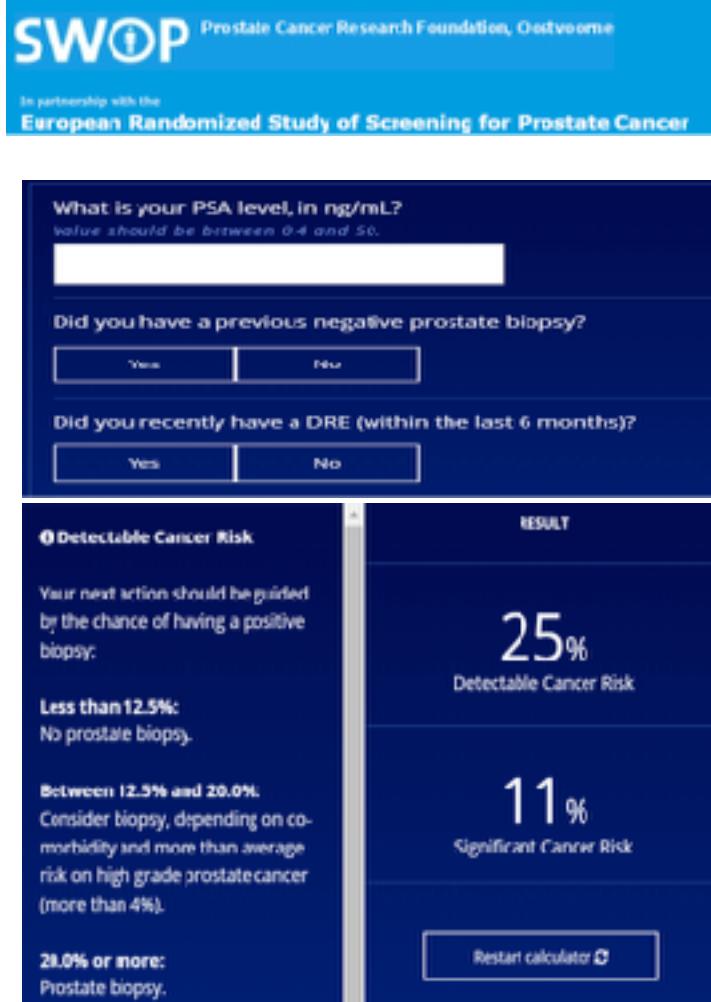
RESULT

0 Detectable Cancer Risk.
Your next action should be guided by the chance of having a positive biopsy:
Less than 12.5%: No prostate biopsy.
Between 12.5% and 20.0%: Consider biopsy, depending on comorbidity and more than average risk on high grade prostate cancer (more than 4%).
20.0% or more: Prostate biopsy.

25% Detectable Cancer Risk

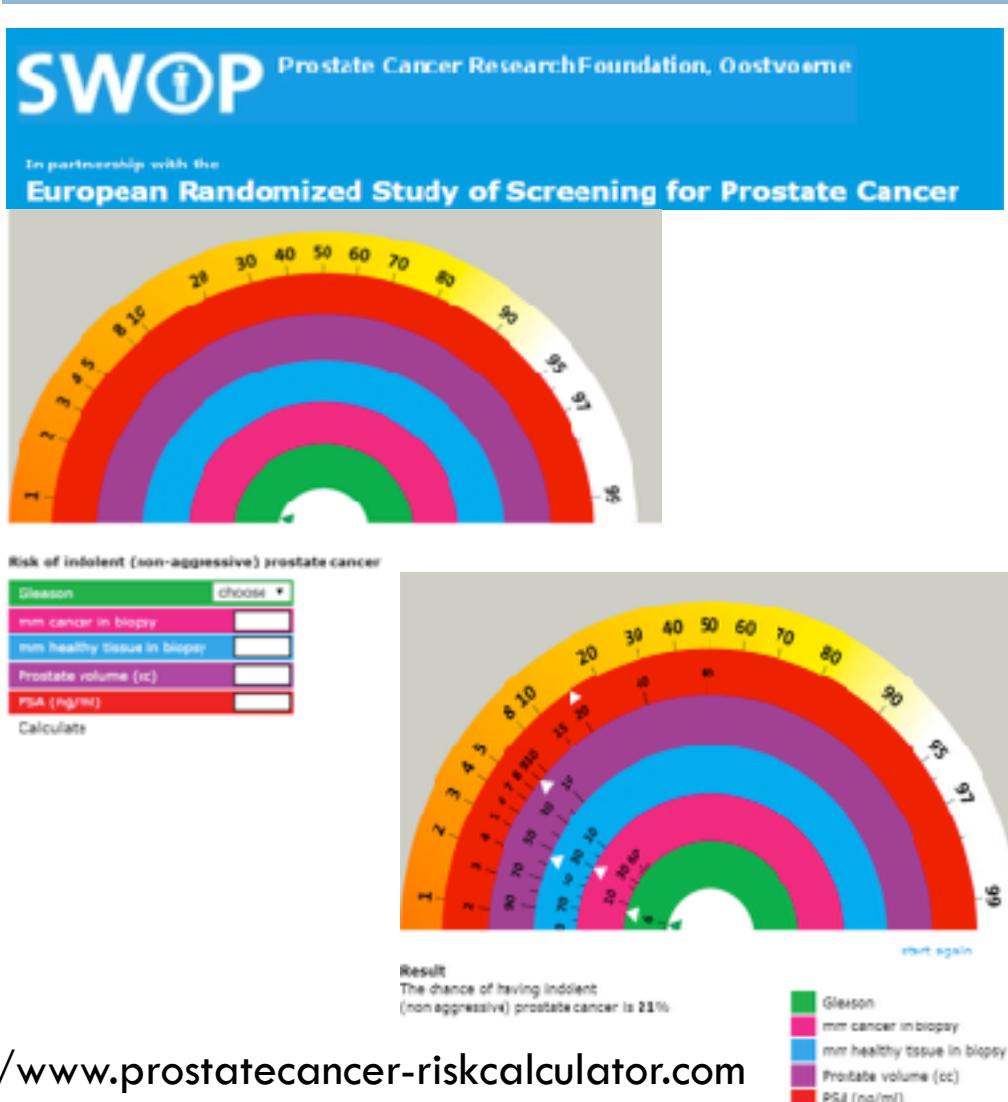
11% Significant Cancer Risk

Restart calculator



- **Calculador de riesgo 3-4:**
- Calcula la probabilidad de tener una biopsia positiva.

Cáncer de Próstata



- **Calculador de riesgo 5:**
 - Probabilidad de presentar un Ca de próstata indolente que puede no requerir tratamiento inmediato.

Cáncer de Próstata

SWOP Prostate Cancer Research Foundation, Ostvoome
in partnership with the
European Randomized Study of Screening for Prostate Cancer

Future Risk Calculator*

Time = 0 (Now)

Age (years)

PSA (ng/ml)

DRE Abnormal Normal

Family history Yes No

DRE volume class (cc)

Previous neg. biopsy Yes No

Time = 4 (4 years later)

Probability of NO Prostate Cancer: 97.3%

Probability of potential LOW RISK Prostate Cancer: 2.1%

Probability of potential AGGRESSIVE Prostate Cancer: 0.7%

- **Calculador de riesgo 6:**
 - Calcula el riesgo de padecer Ca de Próstata en los próximos 4 años.
 - Valora edad, PSA, tacto rectal, historia familiar, volumen prostático, y biopsia previa si la tuviera.

EAU - ESTRO - ESUR - SIOG Guidelines on Prostate Cancer

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M. Bolla, L. Bourke, P. Cornford (Vice-chair), M. De Santis,
A.M. Henry, S. Joniau, T.B. Lam, M.D. Mason, H.G. van der Poel,
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M. Lardas, M. Liew, P. Moldovan, I.G. Schoots, P.M. Willemse

Recommendations

LE GR

In order to avoid unnecessary biopsies, offer further risk-assessment to asymptomatic men with a prostate specific antigen level between 2-10 ng/mL prior to performing a prostate biopsy. Use one of the following tools:

3 C

- risk-calculator:
- an additional serum or urine-based test (e.g. Prostate Health Index test [PHI], four kallikrein [4K]score or Prostate cancer gene 3 [PCA3]) or imaging.

Ca de Próstata: Nomograma de Briganti.

- Invasión ganglionar presente entre 1-26%.
- Usando un corte del 5%:
 - Falsos negativos 1,5%.
 - Sensibilidad 87,3%.
 - Especificidad 70,3%.
 - VPN 98,4%
- Se evita linfadenectomía en 2/3 de los pacientes.

available at www.sciencedirect.com
Journal homepage: www.europeanurology.com

eau
European Association of Urology

Platinum Priority – Prostate Cancer
Editorial by A. Hrdlicka on pp. 488–490 of this issue

Updated Nomogram Predicting Lymph Node Invasion in Patients with Prostate Cancer Undergoing Extended Pelvic Lymph Node Dissection: The Essential Importance of Percentage of Positive Cores

Alberto Briganti^{a,*}, Alessandro Larcher^b, Flavio Abdollah^c, Umberto Cepattonio^a, Andrea Gallina^a, Nazareno Sardelli^a, Marco Bianchi^a, Matteo Sartori^a, Massimo Freschi^a, Stefano Selvaggi^a, Pierre J. Karakiewicz^d, Pierluigi Rigatti^d, Francesco Montorsi^d

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Briganti, A., et al. Updated nomogram predicting lymph node invasion in patients with prostate cancer undergoing extended pelvic lymph node dissection: the essential importance of percentage of positive cores. *Eur Urol.* 2012 Mar;61(3):480-7. doi: 10.1016/j.eururo.2011.10.044. Epub 2011 Nov 7.

Ca de Próstata: Nomograma de Briganti.

Probabilidad de invasión de ganglios linfáticos en pacientes sometidos a Linfadenectomía Pélvica Extendida (LPE) basada en el Nomograma de Briganti (NB)

PSA (decimales con punto)

Estadio clínico

Grado primario de Gleason

Grado secundario de Gleason

% de cilindros positivos

Puntos totales

Probabilidad de invasión %

Nota: punto de corte en el 5%

Fuente: Probability prediction of lymph nodes invasion (LNII) in patients undergoing extended pelvic lymphadenectomy
[www.europeanurology.com/article/S0302-234X\(28\)754290/abstract](http://www.europeanurology.com/article/S0302-234X(28)754290/abstract)

http://www.pixelhive.net/nomograma_briganti/

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Recommendations	LE	GR
Do not perform a lymph node dissection (LND) in low-risk PCa.	2b	A
Perform an extended(e)LND in intermediate-risk PCa if the estimated risk for positive lymph nodes exceeds 5%.	2b	B
Perform an eLND in high-risk PCa.	2a	A
Do not perform a frozen section of nodes during radical prostatectomy (RP) to decide whether to proceed with, or abandon, the procedure.	2a	A
Do not perform a limited LND.	2a	A

NCCN Guidelines Version 1.2018

Prostate Cancer

VERY LOW RISK GROUP

EXPECTED INITIAL THERAPY

PA LOW RISK GROUP

EXPECTED INITIAL THERAPY

ADJUVANT THERAPY

ADJUVANT THERAPY

FAVORABLE INTERMEDIATE RISK GROUP

EXPECTED INITIAL THERAPY

ADJUVANT THERAPY

PATIENT SURVIVAL^a

. PSA increase after than even 6 mo unless clinically indicated

UNFAVORABLE INTERMEDIATE RISK GROUP

EXPECTED PATIENT SURVIVAL^b

INITIAL THERAPY

ADJUVANT THERAPY

 ≥ 10 y ≥ 10 yAdverse feature(s) and no lymph node metastases:^{c,d}
EBRT^e
or
Observation^fRP^g ± PLND if predicted probability of lymph node metastasis $\geq 2\%$ No adverse features or lymph node metastases
Lymph node metastasis:
ADTⁱ (category 1)
± EBRT^e (category 2B)
or
Observation^fUndetectable PSA after RP or PSA nadir^j after RT[See Monitoring for Initial Definitive Therapy \(PROS-10\)](#)PSA persistence/recurrence^{k,l}[See Radical Prostatectomy PSA Persistence/Recurrence \(PROS-11\)](#)[See Radiation Therapy Recurrence \(PROS-12\)](#) ≥ 10 y^g <10 yEBRT^e + ADTⁱ (4-6 mo)or
EBRT^e + brachytherapy^m ± ADTⁱ (4-6 mo) <10 yObservation^f[See Monitoring \(PROS-10\)](#)^aSee Principles of Life Expectancy Estimation (PROS-A).^bSee Principles of Radiation Therapy (PROS-D).^cSee Principles of Androgen Deprivation Therapy (PROS-E).^dSee Principles of Surgery (PROS-E).^eObservation involves monitoring the course of disease with the expectation to deliver palliative therapy for the development of symptoms or a change in exam or PSA that suggests symptoms are imminent. See Principles of Active Surveillance and Observation (PROS-C).^fAdverse laboratory/pathologic features include: positive margin(s), seminal vesicle invasion, extracapsular extension, or detectable PSA.^gPSA nadir is the lowest value reached.^hPSA persistence/recurrence after RP is defined as failure of PSA to fall to undetectable levels (PSA persistence) or undetectable PSA after RP with a subsequent detectable PSA that increases by 2 orⁱASTRO (Radiation Therapy Oncology Group - American Society for Therapeutic Radiology and Oncology) Phoenix Consensus: 1) PSA increase by 2 ng/mL or more above the nadir PSA is the standard definition for PSA persistence/recurrence after EBRT with or without HT; and 2) A recurrence evaluation should be considered when PSA has been confirmed to be increasing after radiation even if the increase above nadir is not yet 2 ng/mL, especially in candidates for salvage local therapy who are young and healthy. Retaining a strict version of the ASTRO definition allows comparison with a large existing body of literature. Rapid increase of PSA may warrant evaluation (prostate biopsy) prior to meeting the Phoenix definition, especially in younger or healthier men.^jActive surveillance of indolent intermediate and high-risk clinically localized cancers is not recommended.

Notes: All recommendations are based on evidence from clinical trials. NCCN Clinical Trials: NCCN.org
 *See Principles of Radiation Therapy (PROS-D).
 **See Principles of Androgen Deprivation Therapy (PROS-E).
 ^See Principles of Active Surveillance and Observation (PROS-C).
 ^See Principles of Surgery (PROS-E).

Note: All recommendations are based on evidence from clinical trials. NCCN Clinical Trials: NCCN.org



Nomograma MSKCC Pre-prostatectomía radical

Disqualifying Treatments

If you are receiving hormone or radiation therapy for prostate cancer – if you answer “yes” to either of the following two questions – the results of this nomogram will not apply to you.

Have you received hormone therapy (Lupron, Taxotere, Casodex, Eulexin, Zoladex, etc.) for prostate cancer prior to surgery?

Yes No

Have you received radiation therapy for prostate cancer prior to surgery?

Yes No

General Information

Please note: This dynamic nomogram summarizes the benefits of treatment in men with life expectancy greater than ten years. The calculations are based on data from men who survived ten to 15 years following treatment. (You can calculate your [life expectancy](#) here, as well as your risk of dying from prostate cancer if it is left untreated.)

► [What is a dynamic nomogram?](#)

How old are you?

years (20 to 99)

What was your PSA level from the laboratory report before your biopsy that found the cancer?

ng/mL (0.1 to 10.0)

Gleason Pattern & Score Information

To use this nomogram successfully, you will need to know your primary and secondary Gleason pattern numbers.

► [How are Gleason patterns/cores determined?](#)

What was the primary Gleason pattern number taken from the biopsy pathology report?

Select primary Gleason

What was the secondary Gleason pattern number taken from the biopsy pathology report?

Select secondary Gleason

What was the biopsy Gleason score?

The score is calculated automatically from the sum of the primary and secondary Gleason pattern numbers.

Clinical Tumor Stages

Clinical tumor stage is determined by digital rectal examination and does not include stages determined by imaging studies.

What was your clinical tumor stage, using the AJCC Version 7/2010 Staging System?

Select 2010 clinical tumor stage

Note: Although it is possible to be stage TX or stage T4, this nomogram is not applicable for these stages.

Biopsy Cores

Information on cores taken at biopsy is optional. The nomogram can provide predictions without this information if not available. However, using this information, the nomogram can provide more refined predictions.

How many positive (cancerous) cores were taken during biopsy?

cores (0 to 20)

How many negative (noncancerous) cores were taken during biopsy?

cores (0 to 20)

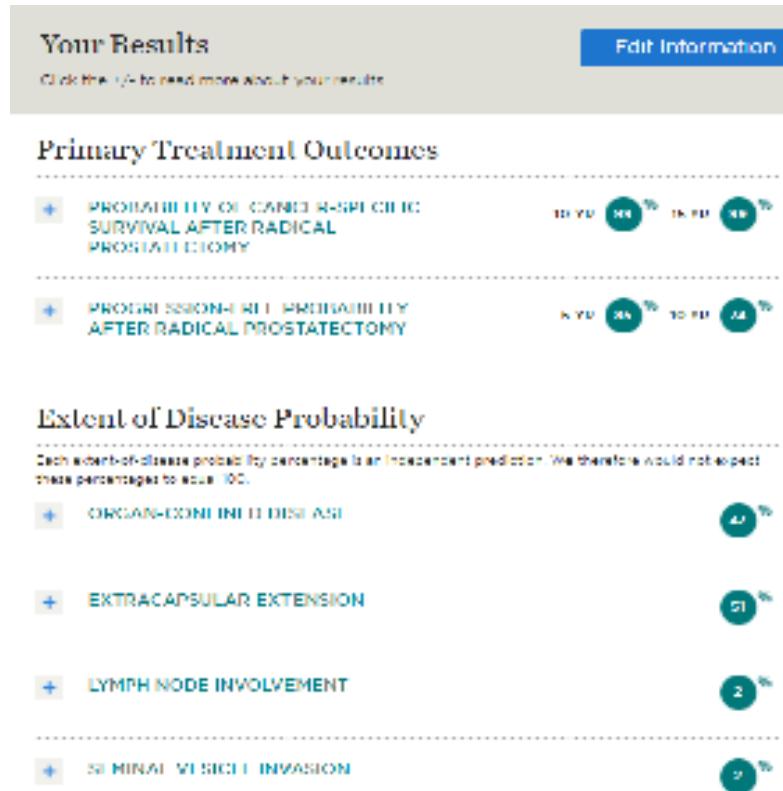
► [What if I have more than 20 negative cores?](#)

What percentage of the biopsy samples taken were positive?

%

(The result is calculated automatically using the numbers entered in preceding two fields.)

Nomograma MSKCC Pre-prostatectomía radical



https://www.mskcc.org/nomograms/prostate/pre_op



Nomograma MSKCC Postprostatectomía radical

General Information

► What is a dynamic nomogram?

What was your PSA value from the laboratory report before the radical prostatectomy was performed?

ng/mL (0.01 to 100)

What was your age at the time of your surgery?

years (40 to 80)

How many months have you been without detectable cancer or a rising PSA following the radical prostatectomy?

(This should be equivalent to the number of months since surgery.)

months (0 to 120)

Frostatectomy Pathology Report Details

Were your surgical margins positive?

Yes No

► What are positive surgical margins?

Was there extracapsular extension?

Yes No

► What is extracapsular extension?

Was cancer present in the seminal vesicles?

Yes No

► What are seminal vesicles?

Was cancer present in the pelvic lymph nodes?

Yes No

► What are pelvic lymph nodes?

Calculate

Clear

What is your Gleason score?

► How are Gleason patterns/scores determined?

What was the primary Gleason pattern number from the radical prostatectomy pathology report?

Select primary Gleason



What was the secondary Gleason pattern number from the radical prostatectomy pathology report?

Select secondary Gleason



What was your Gleason score (the sum of the Gleason pattern numbers)?

Select Gleason score



Your Results

Edit Information

Click the +/- to read more about your results

**+ PROBABILITY OF REMAINING
RECURRENCE-FREE AFTER
SURGERY**



+ 15-YEAR PROSTATE CANCER-SPECIFIC SURVIVAL



https://www.mskcc.org/nomograms/prostate/post_op

Tablas de Partín

PSA:

Clinical Stage: T1c ▾

Gleason Score: 5-6 ▾

Calculate

PSA:6 Clinical Stage:'T2b/T2c' Gleason Score:'3+4'

Organ confined: [34% (27.8%-41.1%)]

Extraprostatic extension: [40% (33.3%-47%)]

Seminal Vesicle Invasion: [18.9% (12.5%-27%)]

Lymph Node Invasion: [7.1% (3.6%-12%)]

All numbers represent predictive probabilities with a 95 percent confidence interval

Volumen prostático y densidad del PSA

Volume, Dimension & Density

This tool calculates prostate tumor volume.

Enter Your Information
All fields are required unless noted optional

Prostate Information

What is the prostate length?
 mm (1 to 200)

What is the prostate width/transverse?
 mm (1 to 200)

What is the prostate height?
 mm (1 to 200)

Treatment Information

What was your PSA before you began receiving hormone therapy?
 ng/ml

Calculate

<https://www.mskcc.org/nomograms/prostate/volume>

Ca renal. Riesgo de recurrencia tras cirugía de Ca renal

Risk of Recurrence Following Surgery

Our kidney cancer nomogram is for patients who underwent partial or radical nephrectomy (removal of a complete kidney) or removal of a kidney for newly diagnosed renal cell carcinoma (a type of kidney cancer). This nomogram predicts the probability of remaining free of renal cell carcinoma five years after surgery more...

Enter Your Information

[Clear](#) [Calculate](#)

What was the histology of your kidney cancer from the biopsy?

Renal cell

[What is histology?](#)

How would you describe the symptoms of your kidney cancer?

Incidental

[More on symptoms](#)

What was your tumor (T) stage from the pathology report?

pT1

Notice: This nomogram was created using the AJCC Version 6 – TNM Staging System (UICC), and is applicable to T stages T1 to T3c. If your pathology report uses a later version with T stages that are not included in this drop-down menu, consult with your physician for further guidance on selecting the correct T stage.

[More on T stages](#)

What was the size of your tumor?

3 cm (0.00) to 20

[Calculate](#)

[Clear](#)

Risk of Recurrence Following Surgery

Your Results

[Edit Information](#)

 RENAL CELL CARCINOMA
RECURRENCE FREE PROBABILITY

5 YR 

5 YEAR

93 %



<https://www.mskcc.org/nomograms/renal>

Kattan, M.W., et al. A postoperative prognostic nomogram for renal cell carcinoma. J Urol. 201 Jul;166(1):63-7.

- **Indice de comorbilidad de Charlson.**
 - <https://www.mdcalc.com/charlson-comorbidity-index-cci>
- **Supervivencia a los 10-15 años MSKCC**
 - webcore.mskcc.org/survey/surveyform.aspx?&preview=true&excelsurveylid=4
- **PCPTRC 2.0 (riesgo de cáncer de próstata pre-biopsia).**
 - <http://myprostatecancerrisk.com/>
- **ERSCP (riesgo de cáncer de próstata pre-biopsia).**
 - <http://www.prostatecancer-riskcalculator.com>
- **Nomograma de Briganti**
 - <http://www.pixelhive.net/nomograma briganti/>
- **Nomograma pre-prostatectomía radical MSKCC.**
 - https://www.mskcc.org/nomograms/prostate/pre_op
- **Nomograma post-prostatectomía radical MSKCC.**
 - https://www.mskcc.org/nomograms/prostate/post_op
- **Tablas de Partin**
 - <http://urology.jhu.edu/support/partinTables.php>
- **Riesgo de recurrencia tras cirugía de Ca Renal.**
 - <https://www.mskcc.org/nomograms/renal>

Bibliografía

- Borque-Fernández, J., et al. Vigencia actual de los nomogramas en la estadificación del Cáncer de Próstata. *Arch. Esp. Urol.*, 59, 10 (989-1.000), 2006.
- Sylvester, R.J., et al. Predicting recurrence and progression in individual patients with stage Ta T1 bladder cancer using EORTC risk tables: a combined analysis of 2596 patients from seven EORTC trials. *Eur Urol.* 2006; 49: 466. <https://www.ncbi.nlm.nih.gov/pubmed/16442208>
- Fernandez-Gomez, J., et al. Predicting nonmuscle invasive bladder cancer recurrence and progression in patients treated with bacillus Calmette-Guerin: the CUETO scoring model. *J Urol.* 2009; 182: 2195. <https://www.ncbi.nlm.nih.gov/pubmed/19758621>
- Cambier, S., et al. EORTC Nomograms and Risk Groups for Predicting Recurrence, Progression, and Disease-specific and Overall Survival in Non-Muscle-invasive Stage Ta-T1 Urothelial Bladder Cancer Patients Treated with 1-3 Years of Maintenance Bacillus Calmette-Guérin. *Eur Urol.* 2016 Jan;69(1):60-9. doi: 10.1016/j.eururo.2015.06.045. Epub 2015 Jul 23.
- Fernandez-Gomez, J., et al. The EORTC tables overestimate the risk of recurrence and progression in patients with non-muscle-invasive bladder cancer treated with bacillus Calmette-Guerin: external validation of the EORTC risk tables. *Eur Urol.* 2011; 60: 423. <https://www.ncbi.nlm.nih.gov/pubmed/21621906>
- Schmitz-Dräger, B.J., et al. The Prostate Cancer Prevention Trial (PCPT). Relevance for clinical practice. *Urologe A.* 2007 Oct;46(10):1364, 1366-8, 1370.
- Briganti, A., et al. Updated nomogram predicting lymph node invasion in patients with prostate cancer undergoing extended pelvic lymph node dissection: the essential importance of percentage of positive cores. *Eur Urol.* 2012 Mar;61(3):480-7. doi: 10.1016/j.eururo.2011.10.044. Epub 2011 Nov 7.
- Mottet, N., et al. EAU-ESTRO-SIOG guidelines on prostate cancer. Part 1: screening, diagnosis, and local treatment with curative intent. *European urology*, 2017, vol. 71, no 4, p. 618-629.
- Foley, R.W., et al. European Randomised Study of Screening for Prostate Cancer (ERSPC) risk calculators significantly outperform the Prostate Cancer Prevention Trial (PCPT) 2.0 in the prediction of prostate cancer: a multi-institutional study. *BJU Int.* 2016 Nov;118(5):706-713. doi: 10.1111/bju.13437. Epub 2016 Feb 29.
- Hinev, Al., et al. Validation of nomograms predicting lymph node involvement in patients with prostate cancer undergoing extended pelvic lymph node dissection. *Urol Int.* 2014;92(3):300-5. doi: 10.1159/000354323. Epub 2014 Jan 25.
- Babjuk, M., et al. EAU guidelines on non-muscle-invasive urothelial carcinoma of the bladder: update 2016. *European urology*, 2017, vol. 71, no 3, p. 447-461.
- Lammers R.J., et al. NMIBC risk calculators: how useful are they for the practicing urologist and how can their clinical utility be improved? *Urol. Clin. North Am.* 2013; 40: 155-64.
- Charlson, M.E., et al. A new Method of Classifying Prognostic Comorbidity in Longitudinal Studies: Development and Validation. *Journal of Chronic Diseases* 40:373-383
- Huang, Y., et al. Prediction of patient-specific risk and percentile cohort risk of pathological stage outcome using continuous PSA measurement, Clinical Stage and biopsy Gleason score. *BJU Int.* 2011 May; 107(10): 1562-1569.

GRACIAS

