



**Figure 2.** Computed tomography angiography showing reduced calibre and wall thickening of the aortic arch and the supra-aortic trunks (white arrows) and stenosis of the left carotid artery (black arrow). A: Sagittal view. B: Axial view.

angiography and magnetic resonance angiography, which allow assessment of wall thickness and avoid false negatives in the early phase of arteriography. The preferred method for follow-up is magnetic resonance angiography, due to the lack of ionizing radiation.<sup>4,6</sup> Doppler echocardiography can detect reduced vessel diameter, prestenotic dilatations, and wall thickening, although it has limitations (gas interposition, obesity, etc).<sup>6</sup> On positron emission computed tomography, which is less available, inflamed vessel walls can be seen as areas of enhancement.<sup>4</sup>

The mainstay of treatment for acute pericarditis is nonsteroidal anti-inflammatory drugs and colchicine (to prevent recurrence), while corticosteroids are the second-line treatment, if the disease fails to respond.<sup>3</sup> If corticosteroids are used, the dose should be low (prednisolone 0.2 to 0.5 mg/kg/day or equivalent). However, in TA, corticosteroids are the treatment of choice, and high doses are required (1 mg/kg/d), with a good response in most patients, but relapses are frequent when the dose is reduced.<sup>4</sup> Good results can also be achieved with methotrexate and biological treatments (antitumour necrosis factor antibodies [infliximab, etanercept, adalimumab], anti-CD20 monoclonal antibodies [rituximab], interleukin 6 receptor antagonists [tocilizumab], and the CTLA-4-Ig fusion protein [abatacept]). In cases of intolerance or contraindication to these therapies, the alternatives are cyclophosphamide, azathioprine, and mycophenolate mofetil.<sup>4</sup>

In this patient with acute pericarditis as the first symptom of TA, in whom some key features initially passed unnoticed (systemic symptoms, raised acute phase reactants, asymmetrical pulses), the poor response to treatment and a further detailed examination led to the diagnosis of underlying TA. In cases of rheumatological disease with initial symptoms related to the heart, the cardiologist may be the first physician to see the patient; therefore, familiarity with these symptoms is essential to achieve an early diagnosis. In addition, some of the treatments used in these types of disease can have different effects on vascular risk (a

negative effect in the case of corticosteroids)<sup>5</sup>; therefore the cardiologist also has an important role at follow-up.

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## Assessment of the New SCORE OP Cardiovascular Risk Charts in Patients Older Than 65 Years



## Evaluación de las nuevas tablas de riesgo cardiovascular SCORE OP para pacientes mayores de 65 años

### To the Editor,

The SCORE (Systematic Coronary Risk Evaluation) risk estimation system estimates the 10-year risk of death due to

coronary or noncoronary cardiovascular disease (cardiovascular risk).<sup>1</sup> The SCORE risk charts are easy to use because they include few parameters: age, sex, systolic blood pressure (SBP), total cholesterol (TC), high-density lipoprotein cholesterol (HDL-C), and smoking. High cardiovascular risk is defined as a 10-year risk of 5% or higher. The guidelines of the fifth Joint Task Force of the European Societies on Cardiovascular Disease Prevention recommend use of the SCORE risk charts to calculate this risk.<sup>2</sup>

**Table 1**  
General Characteristics of the Patients Evaluated

	Men (n = 381, 39.12%)	Women (n = 593, 60.88%)	Total (n = 974)	P value
Age, y	66.99 ± 1.38	66.96 ± 1.38	66.97 ± 1.38	.7487
Presence of any risk factor	287 (75.33)	463 (78.08)	750 (77.00)	.320
Smoking				
Smokers	83 (21.78)	54 (9.11)	137 (14.07)	< .001
Nonsmokers	113 (29.66)	292 (49.24)	405 (41.58)	
Ex-smokers	78 (20.47)	36 (6.07)	114 (11.70)	
Not recorded	107 (28.08)	211 (35.58)	318 (32.65)	
HT	194 (50.92)	272 (45.87)	466 (47.84)	.124
Hypercholesterolemia	193 (50.66)	345 (58.18)	538 (55.24)	.021
SBP, mmHg	131.16 ± 12.99	127.54 ± 12.65	128.96 ± 12.90	< .001
DBP, mmHg	78.71 ± 8.23	77.72 ± 8.59	78.11 ± 8.46	.076
TC, mg/mL	213.91 ± 34.45	228.72 ± 33.36	222.93 ± 34.54	< .001
HDL-C, mg/mL	53.87 ± 12.51	66.99 ± 14.98	61.87 ± 15.45	< .001
HDL-C*, mg/mL	53.93 ± 11.54	66.14 ± 12.89	61.36 ± 13.74	< .001
SCORE risk				
Original SCORE	5.93 ± 2.74	2.89 ± 1.14	4.08 ± 2.43	
SCORE OP*	5.75 ± 1.91	2.59 ± 0.80	3.83 ± 3.70	
Intraclass correlation coefficient (95%CI)	0.78 (0.74-0.82)	0.75 (0.71-0.78)	0.87 (0.86-0.89)	

DBP, diastolic blood pressure; HDL-C, high-density lipoprotein cholesterol; HT, hypertension; 95% CI, 95% confidence interval; SBP, systolic blood pressure; SCORE, Systematic Coronary Risk Evaluation; SCORE OP, Systematic Coronary Risk Evaluation Older Persons; TC, total cholesterol.

Data are expressed as no. (%) or mean ± standard deviation.

\* Includes combined imputed values for missing values.

A limitation of the original SCORE risk chart is that it does not accurately calculate risk in individuals older than 65 years. The SCORE investigators recently published specific risk charts for people above this age threshold, using data from the original SCORE cohorts from Italy, Belgium, and Denmark and a new cohort from Norway.<sup>3</sup>

The aim of the present study was to evaluate the SCORE OP (SCORE Older Persons) risk charts in a Spanish population of people aged 65 years and above.

A cross-sectional study was undertaken in men and women aged 65 to 69 years attending 2 primary care centers. Study participants had at least 1 valid record of SBP and TC for the period 2010 to 2012 (when multiple readings were available, the most recent was selected). The study excluded individuals with a history of cardiovascular disease, as well as those with diabetes mellitus, because this disease is not included in the original SCORE risk calculations.

Cardiovascular risk was calculated according to the SCORE and SCORE OP risk charts for low-risk countries.<sup>1,3</sup> In total, 17.56% of the study participants had no HDL-C values in their medical records; missing values were calculated by multiple imputation using chained equations according to Rubin's rules.<sup>4</sup>

Differences between men and women were evaluated using tests for independent data. Mean risk scores according to each SCORE chart were compared by calculating the intraclass correlation coefficient, and agreement between categorized risk levels was evaluated from the weighted kappa statistic. Data were analyzed with StataMP14 (StataCorp LP).

Data were analyzed from 974 patients aged 65 to 69 years whose cardiovascular risk could be calculated. General patient characteristics are presented in Table 1. The prevalence of smoking was higher among men, whereas a diagnosis of hypercholesterolemia was higher in women and was also associated with higher HDL-C levels. The overall intraclass correlation coefficient was 0.87 (95%CI, 0.86-0.89).

The kappa statistic revealed good agreement between the 2 cardiovascular risk scales overall (kappa = 0.685) and in men (kappa = 0.594), but agreement was weaker for women (kappa = 0.282). By comparison with the original SCORE chart, use of the SCORE OP chart moved 11.29% of men and 0.17% of women to a higher risk category and moved 13.12% of men and 5.4% of women to a lower risk category (Table 2).

**Table 2**  
Comparison of Risk Classification of Patients Aged 65 to 69 Years According to the SCORE and SCORE OP Risk Charts for Low-risk Countries

<b>All patients, kappa = 0.685; 95%CI, 0.641-0.723</b>				
(% total)	SCORE OP*			
	(1.5)	(5.10)	≥ 10	
SCORE	(1.5)	686 (70.43)	40 (4.11)	0 (0)
	(5.10)	65 (6.67)	151 (15.50)	4 (0.41)
	≥ 10%	0 (0)	17 (1.75)	11 (1.13)
<b>Men, kappa = 0.594; 95%CI, 0.481-0.681</b>				
(% total)	SCORE OP*			
	(1.5)	(5.10)	≥ 10	
SCORE	(1.5)	133 (34.91)	39 (10.24)	0 (0)
	(5.10)	33 (8.66)	144 (37.79)	4 (1.05)
	≥ 10%	0 (0)	17 (4.46)	11 (2.89)
<b>Women, kappa = 0.282; 95%CI, 0.115-0.449</b>				
(% total)	SCORE OP*			
	(1.5)	(5.10)	≥ 10	
SCORE	(1.5)	553 (93.25)	1 (0.17)	0 (0)
	(5.10)	32 (5.40)	7 (1.18)	0 (0)
	≥ 10%	0 (0)	0 (0)	0 (0)

CI95%, confidence interval 95%; SCORE, Systematic Coronary Risk Evaluation; SCORE OP, Systematic Coronary Risk Evaluation Older Persons.

Data are expressed as no. (%).

\* Missing values for high-density lipoprotein cholesterol were imputed as described.

The 2 risk charts thus show a satisfactory level of agreement by intraclass correlation coefficient and kappa statistic (except for women); however, cardiovascular risk was systematically lower on the SCORE OP chart. European guidelines recommend a more cautious pharmacological approach with patients older than 60 years because the calculated risk can be high simply due to the patient's age, even when no other risk factors are present.

In Spain, 2 risk charts have been generated from direct analysis of the Spanish population, including the elderly population: the ERICE study, which includes participants ranging in age from 30 years to more than 80 years,<sup>5</sup> and the FRESCO study, which includes individuals aged from 35 to 79 years.<sup>6</sup> These risk calculations are awaiting external validation of their usefulness and impact compared with already available risk charts.

A limitation of the present study is the incomplete dataset for SBP and TC, which impeded risk calculation for some patients. Another limitation is that the analysis was restricted to primary care patients, raising uncertainties about whether the results can be extrapolated to the general population.

Among people older than 65 years, the SCORE OP risk chart gives lower cardiovascular risk estimates than the original SCORE chart, suggesting that fewer patients in this age group might benefit from statin therapy than previously thought. Further validation studies of these risk charts are needed in the Spanish population to assess the level of discrimination and calibration.

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## The Role of Sex and Domestic Physical Activity on the Metabolically Healthy and Unhealthy Obesity. The HERMEX Study



**Efecto del sexo y la actividad física doméstica en el fenotipo obeso metabólicamente sano y el obeso con alteraciones metabólicas. Estudio HERMEX**

### To the Editor,

The concept of metabolically healthy but obese (MHO) reflects a group of obese individuals who seem to be protected against many obesity-related cardiometabolic complications. Characterizing this subgroup of obese individuals and distinguishing them from the metabolically unhealthy obese and the nonobese (either metabolically healthy or unhealthy) is of major clinical and public health interest. Because traditional cardiometabolic markers (such as dyslipidemia, insulin resistance, or hypertension) are used in the definition of MHO, it is important to assess other nontraditional biomarkers (such as apolipoproteins, inflammatory or renal markers), which could further explain the differences observed among the different body-size phenotypes. In addition, the role of sex and physical activity (PA; including domestic PA) in the metabolic status of obese individuals warrants particular attention.

This study assessed: a) the differences in nontraditional cardiometabolic risk markers across the 4 aforementioned body-size phenotypes; b) whether sex differences exist; and c) the extent to which PA levels may play a role in the cardiometabolic profile.

The complete methodology of this population-based cross-sectional study entirely conducted in the province of Badajoz (Extremadura; southwest Spain) has been published elsewhere.<sup>1</sup> Of 2833 participants, 135 were excluded due to previous cardiovascular event (ie, myocardial infarction, angina, or stroke). A total of 2698 participants (aged 25-79 years) were finally included.

Age, educational and occupational status, smoking and alcohol consumption were registered through personal interview. Systolic and diastolic blood pressures were measured according to the European Society of Hypertension. Resting heart rate was measured from the radial pulse for 30 seconds. Plasma insulin, apolipoproteins A and B, high-sensitivity C-reactive protein, glycosylated hemoglobin, triglycerides, high-density lipoprotein cholesterol, low-density lipoprotein cholesterol, total cholesterol, glucose, urea, albumin, creatinine, and fibrinogen concentrations were measured by standard procedures. The albumin-creatinine ratio and estimated glomerular filtration rate were also determined.

Leisure time PA was self-reported through the Minnesota Leisure Time Physical Activity Questionnaire. Participants were classified as physically active if they met the PA guidelines (ie, total PA energy expenditure  $\geq$  500 metabolic equivalents per week).

We defined metabolically healthy or unhealthy in accordance with the Consensus Societies for the definition of metabolic syndrome, and classified individuals into 4 body-size phenotype (ie, obese or nonobese, metabolically healthy or unhealthy).