



## Epidemiology and spatial analysis of cutaneous melanoma in the Marche Region 2010-2017. Preliminary study.

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## Introduction and Objectives

Malignant skin melanoma (CMM) is an aggressive form of skin cancer due to its high ability to metastasize, increasing in many areas of the world. It is an important disease even in younger age groups, in fact, more than 50% of cases are diagnosed under the age of 60, and increases with age. In Italy it represents, both in males and in females, about 2 % of all malignant tumors, given underestimated in consideration of the number of small melanomas removed in surgery and not subjected to histopathological analysis.

The risk of a diagnosis of invasive skin melanoma over a lifetime (between 0 and 74 years) is 8,4 in males and 8,1 in females [3]. The incidence has shown, in recent years, a faster increase in women than men with a decreasing trend from north to south; mortality is broadly stable.

This study examines the epidemiological characteristics of melanomas detected by the Cancer Registry of the Marche Region in the period 2010-2017.

## Materials and Methods

Incidence trends were analysed on a total of 3,237 (1,669 M, 1,568 F) invasive skin melanomas reported in 2010-2017 throughout the Marche Region.

The data were extracted from the Cancer Register of the Marche Region (RTM) which covers a population of 1,501,406 inhabitants (51.3% females) with an average age of 47.1 years and corresponds to 2.5% of the Italian population.

The data was stored and processed using the CrTool management software and Excel software; spatial analysis was studied using the Open Source Geographic Information System (QGIS).

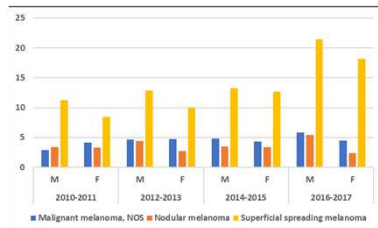
Only the first melanoma diagnosed was inserted and all relapses excluded as established by IARC and ENCR rules.

**Tab 2.** Number, percent distribution by morphology and subsite of Marche Region patients diagnosed with malignant melanoma of the skin stratified by sex and time-periods 2010–2013 and 2014–2017.

	Men				Women			
	2010–2013		2014–2017		2010–2013		2014–2017	
Subsite	N	%	N	%	N	%	N	%
Face, ear, eyelid and lip (C44.0-C44.3)	58	8,25	56	5,73	41	6,07	58	6,44
Head & neck (C44.4)	33	4,69	25	2,56	17	2,52	21	2,33
Trunk (C44.5)	353	50,21	540	55,21	204	30,22	291	32,30
Upper limb & shoulder (C44.6)	116	16,50	191	19,53	119	17,63	165	18,31
Lower limb & hip (C44.7)	91	12,94	106	10,84	231	34,22	320	35,52
NOS & overlapping (C44.8-C44.9)	52	7,40	60	6,13	63	9,33	47	5,22
<b>Morphology</b>								
SSM (8743/3)	378	53,77	558	57,06	319	47,26	524	58,16
Nodular (8721/3)	122	17,35	146	14,93	116	17,19	112	12,43
Lentigo (8742/3)	19	2,70	24	2,45	8	1,19	12	1,33
NOS (8720/3)	135	19,20	182	18,61	172	25,48	166	18,42
Remaining	49	6,97	68	6,95	60	8,89	88	9,77

**Tab 4.** Morphological trends confirmed microscopically: 2010-2017.

	MALES				FEMALES			
	2010-11	2012-13	2014-15	2016-17	2010-11	2012-13	2014-15	2016-17
Lentigo maligna melanoma	0.4	0.78	0.6	0.85	0.17	0.2	0.31	0.29
Nodular melanoma	3.36	4.39	3.51	5.38	3.31	2.75	3.35	2.34
Malignant melanoma, NOS	2.84	4.66	4.79	5.85	4.16	4.74	4.32	4.47
Superficial spreading melanoma	11.26	12.83	13.28	21.46	8.43	9.95	12.68	18.12



Age-specific cancer incidence, by sex: 2010-2017

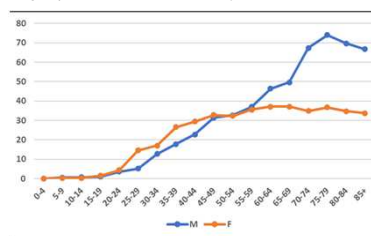
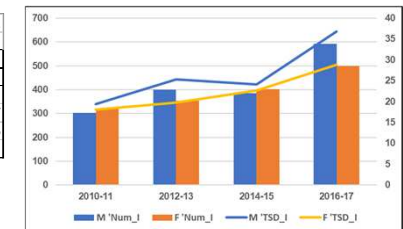


Table 3. RTM. Anni 2010-2017. Trend dei dati di incidenza.

	MASCHI			Femmine		
	Num	TSD	ES	Num	TSD	ES
2010-11	302	19,43	1,12	322	18,09	1,0
2012-13	401	25,32	1,27	353	19,78	1,0
2014-15	386	24,1	1,23	402	22,72	1,0
2016-17	592	36,77	1,52	499	28,84	1,3



## Results and Conclusions

In the Marche region, in the last decade, there has been a considerable increase in the incidence of melanoma. It represents the (fifth) neoplasm as incidence in the male sex and the (sixth) in the female with median age of onset between 44 and 55 years. Incidence has increased over the years in all age groups in both sexes.

In males, most new diagnoses of malignant melanoma in the period 2010-2017 were observed in the 70-79 age group (400 for a standardized rate of 70.32%), in females in the 60-69 range (280 for a standardized rate of 37.2%).

From the analysis of the spatial disposition of the cases emerged from the georeferencing study it seems to be present a greater concentration of the cases in a coastal strip comprised between the municipality of Ancona and the municipality of Senigallia. This fact, confirmed by the analysis of standardized rates, seems to merit further study.