



## 2018 Distillation of Melanoma Statistics

From the Canadian Cancer Society Documents:

*Canadian Cancer Statistics: A 2018 Special Report on Cancer Incidence by Stage.*

*Canadian Cancer Statistics 2017: Special Topic: Pancreatic Cancer.*

*Canadian Cancer Statistics 2016: Special Topic: HPV-Associated Cancers.*

Save Your Skin Foundation, August 2018.

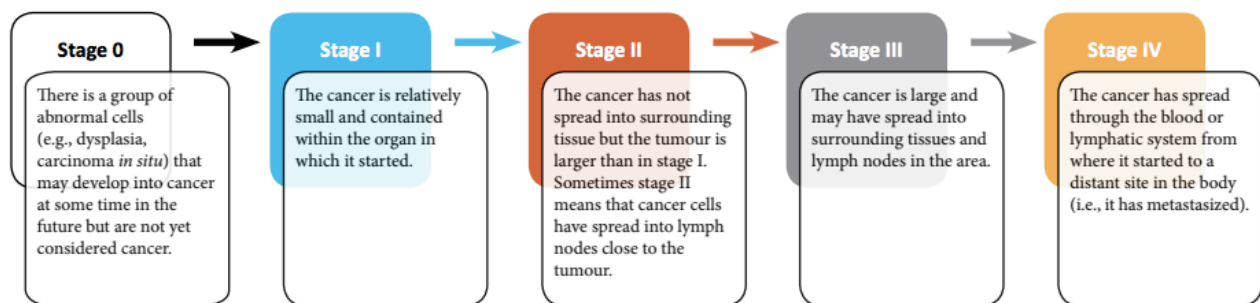
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In the 2018 cancer statistics report, “A Special Report on Cancer Incidence by Stage,” the Canadian Cancer Society (CCS) built on the statistics published in their 2017 statistics report, “Special Topic: Pancreatic Cancer,” reframing this information in the 2018 report to focus on the staging of each particular cancer and the specificity of these statistics. Here, Save Your Skin Foundation will provide an overview of these statistics as they are relevant to melanoma, and recap some of the statistics covered in the 2017 report. All of the statistics included in this report are relevant exclusively to the Canadian population.

## Special Report Statistics

**About Cancer Staging** Cancer staging is the classification of a cancer based on the progression of the disease at the time of diagnosis. While cancer stage at the time of diagnosis is not a determining influence on cancer survival, the Canadian Cancer Society’s statistics suggest that “cancers that present at later stages generally have lower overall five-year net survival” (8). Staging includes the size of the primary tumour, whether the tumour has metastasized, and other factors. The TNM staging system, which stands for tumour, node, metastasis, is the globally accepted staging classification (however, the TNM system is not used to stage blood or lymphatic cancers, and brain or central nervous system tumours). The CCS statistics report (2018) provided the following categorization of the implications of stages 0-IV.



Sometimes uppercase letters are added to the number to divide these categories into substages.

Figure 1: Implications of Cancer Staging (CCS 2018, 9)

Alongside the TNM staging system is the SEER staging system, which stands for surveillance, epidemiology, and end results. The SEER system corresponds roughly to the TNM system as demonstrated in figure 2 (below). Cancer stage is determined at initial diagnosis and prior to any treatment, and therefore does not change throughout the disease. Staging is used to determine the care plan for an individual, and to determine prognosis.

TNM stage	SEER Summary Stage
Stage 0	<i>In situ</i>
Stage I–II	Localized
Stage II–III	Regional
Stage IV	Distant

Figure 2: SEER Staging System vs TNM Staging System (CCS 2018, 10)

While staging data from British Columbia, Ontario, Québec, New Brunswick, and the territories is less reliable, the CCS found almost 100% stage coverage in Alberta, Saskatchewan, Manitoba, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador for the fifteen cancers that are commonly addressed in CCS reports outside of lung, colorectal, female breast, prostate, and cervical cancers, a group which includes melanoma (12).<sup>1</sup> The staging data from these fifteen cancer in the provinces with available data can be seen in figure 3 (below).

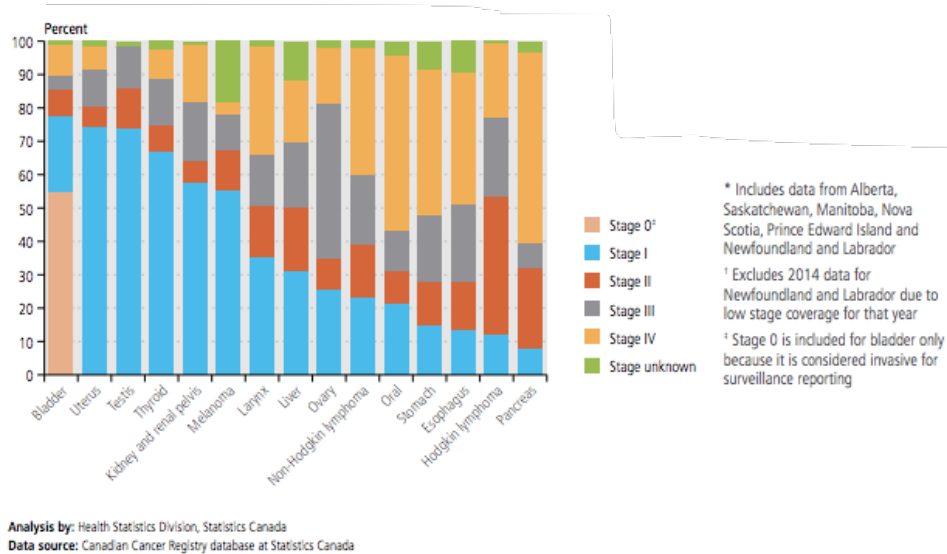


Figure 3: CCS 2018, fig. 11, pp. 26, “Percent Distribution of Cancer Stage at Diagnosis, Selected Cancers, Canada, 2011-2015”<sup>2</sup>

<sup>1</sup> The other cancers in this category were: bladder, non-Hodgkin lymphoma, uterus, thyroid, kidney and renal pelvis, pancreas, oral, stomach, ovary, liver, esophagus, larynx, testis, Hodgkin lymphoma.

<sup>2</sup> Notes accompanying this figure: this figure includes data from Alberta, Saskatchewan, Manitoba, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador; this figure excludes 2014 data for Newfoundland and Labrador due to minimal stage coverage in that year for that province; and that stage 0 data is included for bladder cancer because it is considered to be invasive for surveillance reporting.

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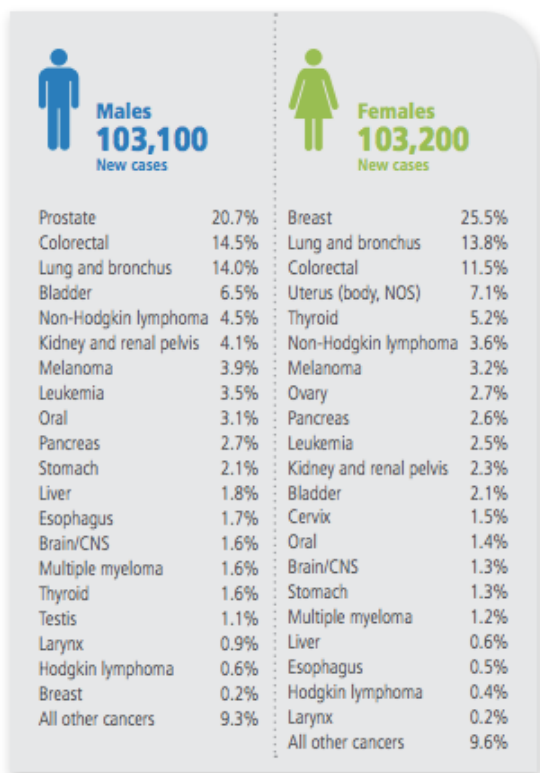
A few conclusions can be reached from the results demonstrated in the figure above. One of these is that melanoma, likely due to visible indicators such as moles, was more often diagnosed at an earlier stage than some other cancers such as pancreatic, oral, stomach, and esophageal (26). As demonstrated in figure 3, the staging breakdown for melanoma is as follows: 55.1% of diagnosis' occurred at Stage I, 12.2% at Stage II, 10.4% at Stage III, 3.9% at stage IV, and the stage of 18.4% of diagnosis' was unknown (figure 3, CCS 2018 26). The net survival for melanoma, over all stages, was 88% (26). The CCS report suggests that the large quantities of diagnoses with an unknown stage may be indicative of challenges cancer registries face in collecting this information, such as data sources and medical reports (27).

"A Special Report on Cancer Incidence by Stage" concluded by highlighting the value of a stage-based analysis and the observations that may be made of the results. While these results were not released for the selection of fifteen cancers that included melanoma, the CCS suggests that having available data on staging across the Canadian provinces will enable a closer examination on the differences in net survival across provinces, and the disparity in early detection across provinces (27). Additionally, the development of a staging data set will provide resources for testing the efficacy of new screening and care methods over time (27).

As the CCS "A Special Report on Cancer Incidence by Stage" content that is relevant to melanoma is brief, Save Your Skin will also provide a brief recap on the melanoma-related data included in previous CCS reports, including the 2017 report "Special Topic: Pancreatic Cancer," and the 2016 report "Special Topic: HPV-Associated Cancers."

## Melanoma Statistics from the Canadian Cancer Society 2016 and 2017 Statistics Reports

**FIGURE 1.2** Percent distribution of projected new cancer cases, by sex, Canada, 2017



CNS=central nervous system, NOS=not otherwise specified

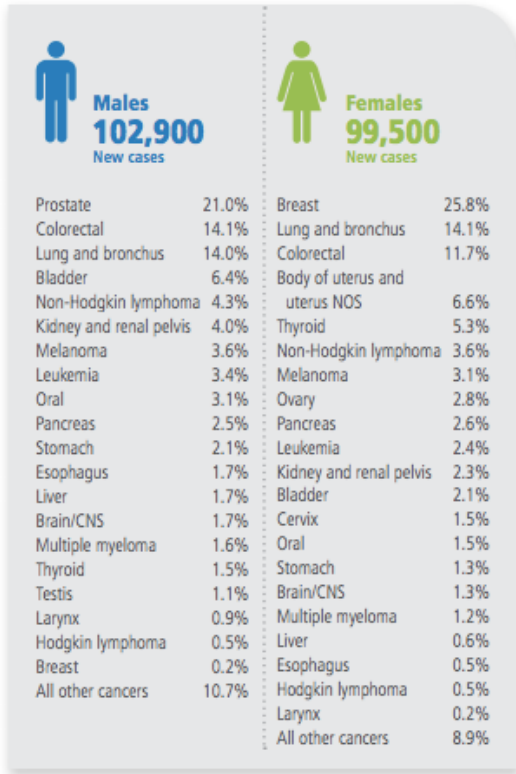
**Note:** The complete definition of the specific cancers listed here can be found in Table A2.

**Analysis by:** Surveillance and Epidemiology Division, CCDP, Public Health Agency of Canada  
**Data sources:** Canadian Cancer Registry and National Cancer Incidence Reporting System databases at Statistics Canada

- In 2017, there were estimated to be 206,300 new cases of cancer. 103,100 of these were male; 103,200 were female (CCS 2017, 21, fig. 1.2, below).
- Of the male cases, 3.9% were estimated to be melanoma (CCS 2017, 21, fig. 1.2, below).
- Of the female cases, 3.2% were estimated to be melanoma (CCS 2017, 21, fig. 1.2, below).

Figure 4: CCS 2017, fig. 1.2, pp. 21, “Percent Distribution of Projected New Cancer Cases, by Sex, Canada, 2017”

**FIGURE 1.2** Percent distribution of estimated new cancer cases, by sex, Canada, 2016



CNS=central nervous system, NOS=not otherwise specified

**Note:** The complete definition of the specific cancers listed here can be found in Table A8.

**Analysis by:** Surveillance and Epidemiology Division, CCDD, Public Health Agency of Canada  
**Data sources:** Canadian Cancer Registry and National Cancer Incidence Reporting System databases at Statistics Canada

- In 2016, there were estimated to be 202, 400 new cases of cancer, meaning there was an increase of 3, 900 new cases of cancer in 2017. 102, 900 of these were male; 99, 500 were female (CCS 2016, 19, fig. 1.2, above).
- Of the male cases, 3.6% were estimated to be melanoma (CCS 2016, 19, fig. 1.2, above).
- Of the female cases, 3.1% were estimated to be melanoma (CCS 2016, 19, fig. 1.2, above).
- Incidence rates of melanoma have increased in both males and females over the last decade. Between 1992-2013 incidence rates increased by 2.1% per year in males and 2.0% per year in females (CCS 2017, 26).

Figure 5: CCS 2016, fig.1.1, pp. 91, “Percent Distribution of Projected New Cancer Cases, by Sex, Canada, 2016”

**TABLE 1.1** Lifetime probability (%) of developing cancer overall and at selected ages, Canada, 2010

	Lifetime probability of developing cancer		Probability (%) of developing cancer in the next 10 years at selected ages					
	%	One in:	30	40	50	60	70	80
<b>Males</b>								
<b>All cancers*</b>	<b>49.4</b>	<b>2.0</b>	<b>0.7</b>	<b>1.8</b>	<b>6.0</b>	<b>14.6</b>	<b>22.7</b>	<b>25.6</b>
Prostate	14.1	7	—	0.2	1.7	5.0	6.2	5.0
Lung and bronchus	8.7	11	—	0.1	0.7	2.2	4.0	3.9
Colorectal	7.4	13	0.1	0.2	0.8	1.9	3.1	3.4
Bladder	4.0	25	—	0.1	0.3	0.9	1.7	2.1
Non-Hodgkin lymphoma	2.3	43	0.1	0.1	0.3	0.6	0.9	0.9
Leukemia	2.0	51	—	0.1	0.2	0.4	0.7	0.9
Kidney and renal pelvis	1.8	54	—	0.1	0.3	0.5	0.6	0.5
Melanoma	1.8	56	0.1	0.1	0.2	0.4	0.6	0.7
Oral	1.5	68	—	0.1	0.3	0.4	0.5	0.4
Pancreas	1.3	74	—	—	0.1	0.3	0.6	0.6
Stomach	1.3	78	—	0.1	0.1	0.3	0.5	0.6
Esophagus	0.9	112	—	—	0.1	0.2	0.3	0.4
Multiple myeloma	0.9	117	—	—	0.1	0.2	0.4	0.4
Brain/CNS	0.8	123	—	0.1	0.1	0.2	0.2	0.2
Liver	0.8	127	—	—	0.1	0.2	0.3	0.3
Larynx	0.6	170	—	—	0.1	0.2	0.2	0.2
Thyroid	0.5	189	0.1	0.1	0.1	0.1	0.1	0.1
Testis	0.4	247	0.1	0.1	—	—	—	—
Hodgkin lymphoma	0.2	426	—	—	—	—	—	—
Breast	0.1	756	—	—	—	—	0.1	0.1
<b>Females</b>								
<b>All cancers*</b>	<b>45.4</b>	<b>2.2</b>	<b>1.4</b>	<b>3.3</b>	<b>6.5</b>	<b>11.1</b>	<b>16.0</b>	<b>17.8</b>
Breast	12.4	8	0.4	1.3	2.3	3.3	3.6	2.9
Lung and bronchus	7.1	14	—	0.2	0.7	1.8	2.9	2.3
Colorectal	6.4	16	0.1	0.2	0.6	1.2	2.2	2.8
Uterus (body, NOS)	2.8	35	0.1	0.2	0.6	0.9	0.8	0.5
Non-Hodgkin lymphoma	2.0	51	—	0.1	0.2	0.4	0.7	0.7
Thyroid	1.8	56	0.3	0.4	0.4	0.3	0.3	0.1
Ovary	1.4	69	—	0.1	0.2	0.3	0.4	0.4
Leukemia	1.4	70	—	0.1	0.1	0.2	0.4	0.6
Pancreas	1.4	72	—	—	0.1	0.2	0.5	0.6
Melanoma	1.4	74	0.1	0.2	0.2	0.3	0.3	0.3
Bladder	1.2	82	—	—	0.1	0.2	0.4	0.5
Kidney and renal pelvis	1.1	88	—	0.1	0.2	0.2	0.4	0.3
Stomach	0.8	133	—	—	0.1	0.1	0.2	0.4
Oral	0.7	136	—	—	0.1	0.2	0.2	0.2
Multiple myeloma	0.7	141	—	—	0.1	0.1	0.3	0.3
Brain/CNS	0.7	151	—	—	0.1	0.1	0.2	0.2
Cervix	0.7	152	0.1	0.1	0.1	0.1	0.1	0.1
Esophagus	0.3	349	—	—	—	0.1	0.1	0.1
Liver	0.3	359	—	—	—	0.1	0.1	0.1
Hodgkin lymphoma	0.2	497	—	—	—	—	—	—
Larynx	0.1	966	—	—	—	—	—	—

Analysis by: Surveillance and Epidemiology Division, CCDP, Public Health Agency of Canada

Data sources: Canadian Cancer Registry and Canadian Vital Statistics Death databases at Statistics Canada

Figure 6: CCS 2017, tab. 1.1, pp. 37, “Lifetime Probability (%) of Developing Cancer Overall and at Selected Ages, Canada, 2010”<sup>3</sup>

<sup>3</sup> This table (1.1) included the following notes: “—” represents a value of less than 0.05; “CNS=central nervous system” and “NOS=not otherwise specified;” “All cancers’ includes *in situ* bladder cancer, except for Ontario, and excludes non-melanoma skin cancer (neoplasms, NOS; epithelial neoplasms, NOS; and basal and squamous);” and a note stating: “the probability of developing cancer is calculated based on age- and sex-specific cancer incidence and mortality rates for Canada in 2010. For further details, see *Appendix II: Data Sources and Methods*. The complete definition of the specific cancers included here can be found in Table A2 [CCS 2017, pp. 129]”

**TABLE 1.2** Projected new cases and age-standardized incidence rates (ASIR) for cancers, by sex, Canada, 2017

	New cases (2017 estimates)			Cases per 100,000		
	Total*	Males	Females	Total	Males	Females
<b>All cancers</b>	<b>206,200</b>	<b>103,100</b>	<b>103,200</b>	<b>515.9</b>	<b>548.4</b>	<b>495.6</b>
Lung and bronchus	28,600	14,400	14,200	69.9	76.5	65.3
Colorectal	26,800	14,900	11,900	66.3	79.6	54.9
Breast	26,500	230	26,300	68.1	1.2	130.3
Prostate	21,300	21,300	—	—	110.4	—
Bladder <sup>†</sup>	8,900	6,700	2,200	21.8	36.3	9.8
Non-Hodgkin lymphoma	8,300	4,600	3,700	20.8	24.6	17.6
Uterus (body, NOS)	7,300	—	7,300	—	—	35.7
Melanoma	7,200	4,000	3,300	18.5	21.3	16.3
Thyroid	7,100	1,650	5,400	19.0	8.8	29.1
Kidney and renal pelvis	6,600	4,200	2,400	16.5	22.3	11.3
Leukemia	6,200	3,600	2,600	15.5	19.6	12.0
Pancreas	5,500	2,800	2,700	13.5	14.7	12.4
Oral	4,700	3,200	1,450	11.9	17.1	7.1
Stomach	3,500	2,200	1,300	8.6	11.8	5.9
Brain/CNS	3,000	1,700	1,300	7.8	9.2	6.6
Multiple myeloma	2,900	1,700	1,200	7.1	9.1	5.6
Ovary	2,800	—	2,800	—	—	13.7
Liver	2,500	1,900	580	6.1	9.9	2.7
Esophagus	2,300	1,800	530	5.7	9.5	2.4
Cervix	1,550	—	1,550	—	—	8.3
Larynx	1,150	970	180	2.8	5.1	0.8
Testis	1,100	1,100	—	—	6.1	—
Hodgkin lymphoma	990	570	430	2.7	3.1	2.3
All other cancers	19,500	9,600	9,900	48.5	52.4	45.6

**Analysis by:** Surveillance and Epidemiology Division, CCOP, Public Health Agency of Canada

**Data sources:** Canadian Cancer Registry and National Cancer Incidence Reporting System databases at Statistics Canada

Figure 7: CCS 2017, tab. 1.2, pp. 38, “Projected New Cases and Age-Standardized Incidence Rates (ASIP) for Cancers, by Sex, Canada, 2017”<sup>4</sup>

<sup>4</sup> This table (1.2) included the following notes: “—” represents a non-applicable value; “CNS=central nervous system” and “NOS= not otherwise specified;” that due to rounding, column totals may not sum to row totals; that “bladder cancer is underprojected because insufficient data were available to include Ontario’s in situ bladder cancer cases (see *Appendix II: Data and methods issues*);” and a note stating: “‘all cancers’ excludes non-melanoma skin cancers (neoplasms, NOS; epithelial neoplasms, NOS; and basal and squamous). Rates are age-standardized to the 2011 Canadian population. The complete definition of the specific cancers listed here can be found in Table A2 [CCS 2017, pp.129].”



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- As per table 1.1 above (CCS 2017, table 1.1, pp. 37):
    - in 2017, males were estimated to have a 1.8%, or 1 in 56, chance of developing melanoma.
    - in 2017, females were estimated to have a 1.4%, or 1 in 74, chance of developing melanoma.
    - For both males and females, the likelihood of developing melanoma increases with the advance of age (by decades).
  - As per table 1.2 above (CCS 2017, table 1.2, pp. 38):
    - In 2017, there were an estimated 7, 200 new cases of melanoma, or 18.5 new cases of melanoma per 100, 000 Canadians
      - Of these cases, 4, 000 of these were male and 3, 300 were female

While melanoma incidence statistics have not been updated by the Canadian Cancer Society since 2017, considering the set of stage-specific statistics contained within the 2018 report, “A Special Report on Cancer Incidence by Stage,” paints a more detailed picture of melanoma diagnosis patterns in recent years. While melanoma incidence rates are rising, the knowledge that melanoma is more frequently diagnosed as lower stages may suggest that awareness of the disease is increasing, and therefore so are early detection and diagnosis rates (CCS 2017, 26; CCS 2018, 26). Hopefully the importance of staging statistics in addition to incidence statistics will continue to be emphasized, and ideally demonstrate a consistent diagnosis of melanoma in early stages, while melanoma diagnosis rates drop due to a Canadian public that is increasingly aware of skin cancer and methods of preventing the disease.

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## Works Cited

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