

Medical Directive on Chronic Sunlight/Solar Ultraviolet Exposure for Skin Conditions

Approved by National Medical Advisor 2021-03-11

VAC recognizes the relationship between significant chronic sun exposure to skin and later development of malignant melanoma of the skin, basal cell carcinoma of the skin, squamous cell carcinoma of the skin and actinic/solar keratoses. Please note that there may be other risk factors for these conditions, especially malignant melanoma of the skin, which are not addressed here.

This directive does not include malignancy of the anus, genitalia or nail beds(subungual). These areas are not considered to be generally at risk for sun exposure. Entitlements for malignancy “of the skin” do not include these areas. Malignancy of these areas should be referred to Medical Advisory for review of other identified risk factors.

For **chronic sun exposure**, number of hours of sunlight exposure to skin accepted for increased risk of the above conditions is **4500** hours in a tropical area, or having equivalent sunlight exposure in other Latitude Zones.

Sunlight exposure resulting in **significant sunburn** at least two years before the clinical onset of the skin condition is also considered a risk factor for malignant melanoma of the skin, basal cell carcinoma of the skin, and squamous cell carcinoma of the skin,. (**Note:** Actinic Keratosis is not included here.)

A significant sunburn would result in blistering of the skin or painful erythema of the skin of at least 48 hours duration. Medical attention would likely be required. For entitlement purposes, only those portions of the body involved in the sunburn would be included in the entitlement. Any lesions outside the specified involved area would require a separate entitlement decision. However, entitled conditions would be bracketed for assessment purposes. These entitlements should be referred to medical advisory for assessment of the sunburn severity and also for final diagnosis.

For basal cell carcinoma, squamous cell carcinoma or actinic keratosis related to chronic sun exposure, the entitlement should not identify a specific lesion or area but rather state Basal Cell Carcinoma of the Skin, Squamous Cell Carcinoma of the Skin or Actinic Keratosis. When these conditions result from exposures other than chronic sun exposure, the site should be specified. The diagnoses of Basal Cell Carcinoma of the Skin and/or Squamous Cell Carcinoma of the Skin do not include malignancy of the anus, genitalia or nail beds (subungual). These sites require separate entitlement and require consult with Medical Advisory. The requirement for bracketing with other entitlements for assessment would be done on a case by case basis. The assessment will be provided by Medical Advisory.

Entitlement for Basal Cell Carcinoma of the Skin includes all basal cell carcinomas of the skin. A new entitlement is not needed for further lesions.

Entitlement for Squamous Cell Carcinoma of the Skin includes all squamous cell carcinomas of the skin. A new entitlement is not needed for further lesions.

Basal Cell Carcinoma of the Skin and Squamous Cell Carcinoma of the Skin are bracketed for assessment but should be entitled separately.

Actinic Keratosis is not bracketed with the skin cancers for assessment. Entitlement includes all involved areas. A new entitlement is not needed for further lesions/areas of involvement.

Any malignant melanoma would be identified by site and given a separate assessment and entitlement.

Determining hours of sunlight exposure

In determining the total amount of exposure experienced in service, the following factors for each block of service must be taken into account:

1. Length of service

2. Type of service

--World War II (all service, including service in Canada, is ruled under 21.1, therefore done on SDA table, latitude factor 1.0)

-DND Canada

-DND Foreign Service

-DND Special Duty Area/Special Duty Operation

-RCMP Canada

-RCMP Special Duty Area/Special Duty Operation

-RCMP Foreign Liaison Office

3. Latitude zone of the service

4. Percentage of time spent outdoors during a working day: Based on occupation

The values obtained would then be entered into the appropriate attached Excel worksheet to determine the number of hours of exposure. The worksheet takes into account the average length of work week and vacation time for each type and location of service. This is predetermined. There are separate worksheets for DND and RCMP service.

The length of service, type of service, and daily exposure based on occupation would be obtained from the service records.

Latitude

The Latitude for any particular zone of service would be determined using a web based search engine. The following weighting system would then be applied.

Appendix A

Latitude zone	Latitude weighting factor
a latitude between 23° 27' South and 23° 27' North	1.0
a latitude from > 23° 27' to 35°	0.75
a latitude from > 35° to 45°	0.5
a latitude from > 45° to 65°	0.25

As the vast majority of Canada is above the 45th parallel, Canadian service will be assigned a factor of 0.25. See Appendix A for Latitude Zone of some SDA/foreign service locations.

Percentage of time spent Outdoors

The percentage of time spent outdoors during a working day will depend on both occupation and location. These ratings are based on classifying occupations as primarily indoor vs. primarily outdoor. These will be determined as follows:

	primarily indoor	primarily outdoor
- Canada/Foreign Service	0.5	0.9
- Special Duty Area/ Special Duty Operation	1.0	1.0

Note: After applying the above criteria, the following are true:

-For those with *regular service* (does not include part time):

Regardless of occupation, greater than 19 years of full time service would be considered sufficient exposure,

Occupations with primarily outdoor service for greater than 10 years would be considered sufficient exposure

-For those with SDA service:

Greater than 6 months service in Zone 1 considered sufficient exposure

Greater than 12 months in Zone 0.75 considered sufficient exposure

Appendix A

Country	Zone
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Afghanistan	0.75
Angola	1.0
Bahamas	0.75
Belgium	0.25
Bosnia	0.5
Canada	0.25
Croatia	0.5
Cyprus	0.75
East Timor	1.0
Egypt	0.75
England	0.25
Germany	0.25
Haiti	1.0
Indochina	1.0
Iran	0.75
Iraq	0.75
Israel	0.75
Kuwait	0.75
Pakistan	0.75
Rwanda	1.0
Sierra Leone	1.0
Somalia	1.0
South Korea	0.75 At most southern tip
Syria	0.75

USA	Hawaii	1.0
USA	Other than Hawaii	Do by region
Viet Nam		1.0
Yugoslavia		0.5

Approach to Sun Exposure File

Need to know details about veteran's service:

- What occupation (indoor versus outdoor)?
- Where was the service?
- How long was the service?

There are some initial "quick looks" that can determine decision:

Positive decision if:

1. Greater than 19 years of full time service (not part time)
 - a. No need to look at type of service or location
 - b. If SDA service, give to first tour

2. Greater than 10 years of full time service (not part time), primarily **outdoors**
 - a. No need to look at location
 - b. If SDA service, give to first tour

3. SDA service greater than 6 months service in Zone 1
 - a. Give to first tour

4. SDA service greater than 12 months in zone 0.75
 - a. Give to first tour

Negative Decision if:

1. Canadian Service only, primarily **outdoors** less than 8 years

2. Canadian service only, primarily **indoors** less than 16 years

All applications not included above should have an estimate of exposure done by completing a worksheet.

Completing the Worksheet

1. Select the appropriate worksheet, DND or RCMP.

2. For **Canadian service**, the latitude is fixed at 0.25.
 For each MOC/MOSID, determine:
 - a. Number of years in that MOC/MOSID. Round the number of years off to the nearest 0.5. Insert value in the table.
 - b. If the MOC primarily indoors or outdoors. Place appropriate factor (0.5, 1.0) in the table

Repeat the steps for each MOC/MOSID.

The table will provide a running total. If the value exceeds 4500, there is no need to continue.

3. For **SDA service**, the type of service is fixed at outdoors (1.0)

For each SDA, determine:

- a. Number of years/months in that SDA.

Round the number of years up to the nearest 0.5.

If the length of an SDA tour is more correctly measured in months, any portion of 6 months will be rated as 6 months, or 0.5 of a year.

Appendix C SDA Service

Number of months	years
1 day – 6 months	0.5
Greater than 6 months – 12 months	1.0
Greater than 12 months – 18 months	1.5

Greater than 18 months – 24 months	2.0
Greater than 24 months – 30 months	2.5

Insert value in the table.

- b. Determine the latitude weighting factor of the SDA service.

If the country is not included in Appendix B, use Google to search: latitude “country name”. After determining the latitude, use Appendix A to determine the weighting factor. If unsure, consult a coach or MA. As appropriate, new values will be added to Appendix B.

Appendix A

Latitude zone	Latitude weighting factor
a latitude f 0° and 23° 27'	1.0
a latitude from > 23° 27' to 35°	0.75
a latitude from > 35° to 45°	0.5
a latitude from > 45° to 65°	0.25

Example 1

Google search for: latitude Cambodia gives the following coordinates

12.5657° N, ~~104.9910° E~~.

For these calculations only the degrees north or south of the equator are relevant. The direction does not matter, only the value

12° is less than 23° , giving a latitude factor of 1.0

Example 2

Google search for: latitude Rwanda gives the following coordinates

1.9403° S, ~~29.8739° E~~

Here the latitude is south of the equator and is less than 23°, giving a latitude factor of 1.0

Example 3

Google search for: latitude Bosnia gives the following coordinates

43.9159° N, ~~17.6791° E~~

Here the latitude is from > 35° to 45°, giving a latitude weighting factor of 0.5

Place appropriate factor (1.0, 0.75, 0.5, 0.25) in the table.

Repeat the steps for each MOC/MOSID.

The table will provide a running total. If the value exceeds 4500, there is no need to continue.

Case Scenarios

(1)

Veteran served as a Deckhand during Merchant Navy service during WWII between 1944 and 1947, with overseas service. Served as a Dental Clinic Assistant (MOC 722) and Dental Hygienist (MOC 725) during Regular Force service between 1957 and 1978, Canada only.

In this case, could his skin cancer be related to sun exposure during his military service?

Total years service: 21

Sufficient exposure

Any SDA?

Yes

Give to Active Force

(2)

Client completed two six month tours in Afghanistan and one five month tour in Pakistan. He would have had significant intense sun exposure during these SDA tours. Would this amount of sun exposure cause his basal cell carcinoma?

Total service: Not provided

SDA service

12 months Afghanistan (1 year) Zone 0.75

Pakistan 5 months (0.5 year) Zone 0.75

See Excel

DND SDA hrs/year	Latitude	years	outdoor	Period Hours
4368	0.75	1	1	3276
4368	0.75	0.5	1	1638
4368		0	1	0
4368		0	1	0
4368		0	1	0
4368		0	1	0
4368		0	1	0
			SDA HOURS	4914

Greater than 4500 hours. Give to earliest SDA.

(3)

Veteran served as a Pilot with the Royal Canadian Air Force during Regular Force service between 1960 and 1966, with SDA service in Egypt for one year between 1965 and 1966.

Claiming above skin conditions to sun exposure during service

In this case, could sun exposure during this client's military service cause his skin cancers and AK?

Total length of service = 6 years


SDA Egypt zone 0.75 for 1 year

Pilot indoor vs outdoor

See Excel calculations: outdoor 0.5 = 3276 hours outdoor 0.9 = 5436

Please note Canadian service = total minus SDA

Considered primarily indoor, rating under outdoor is **0.5**

DND Canada hrs/year	Latitude	years	Outdoor	Period Hours	Total Hours	
1920	0.25	5		0.5	1200	4476
1920	0.25	0			0	
1920	0.25	0			0	
1920	0.25	0			0	
1920	0.25	0			0	
1920	0.25	0			0	
			Canada Hours		1200	
DND SDA hrs/year	Latitude	years	outdoor	Period Hours		
4368	0.75	1		1	3276	
4368		0		1	0	
4368		0		1	0	
4368		0		1	0	
4368		0		1	0	
4368		0		1	0	
4368		0		1	0	
			SDA HOURS		3276	

Considered primarily outdoor, rating under outdoor is **0.9**

DND Canada hrs/year	Latitude	years	Outdoor	Period Hours	Total Hours
1920	0.25	5	0.9	2160	5436
1920	0.25	0		0	
1920	0.25	0		0	
1920	0.25	0		0	
1920	0.25	0		0	
1920	0.25	0		0	
			Canada Hours	2160	
DND SDA hrs/year	Latitude	years	outdoor	Period Hours	
4368	0.75	1	1	3276	
4368		0		0	
4368		0		0	
4368		0		0	
4368		0		0	
4368		0		0	
4368		0		0	
			SDA HOURS	3276	

If deemed primarily outdoor, can entitle both conditions to earliest SDA.

If deemed primarily indoor, refer to MA.

(4)

The client served in the Regular Force for 22 years as an Airframe Technician and Aviation Technician. He states that most of his work was conducted outdoors, such as repairing, refueling, and maintaining aircraft and equipment. He also mentions being outdoors for parades, field exercises, and other duties.

Total years service > 19: YES

“The client has 22 years of Regular Service. This would be considered a significant risk factor for the development of Squamous Cell Cancer of the Skin.”

(5)

Veteran served as a Crewman (MOC R021) during Reserve Force service between 1971 and 1981, with six months SDA service in Egypt in 1978 and six months SDA service in Israel.

Also at the US Base St. Lewis, Tacoma, Washington in 1972, 1973, 1974, 1976, 1977, and 1979. Total of 57 days.

DND Canada hrs/year	Latitude	years	Outdoor	Period Hours	Total Hours
1920		0.25	0.5	240	3516
1920		0.25	0	0	
1920		0.25	0	0	
1920		0.25	0	0	
1920		0.25	0	0	
1920		0.25	0	0	
			Canada Hours	240	
DND SDA hrs/year	Latitude	years	outdoor	Period Hours	
4368		0.75	0.5	1	1638
4368		0.75	0.5	1	1638
4368			0	1	0
4368			0	1	0
4368			0	1	0
4368			0	1	0
4368			0	1	0
			SDA HOURS	3276	

This client's sun exposure in service is estimated to be the equivalent of 3516 hours at the equator. This is not considered to be a sufficient exposure to cause skin cancer.

6. Veteran served as an Infantryman (MOC 031) and Supply Technician (MOC 911) between April 1954 and January 1983, with SDA service in Cyprus between October 1967 and April 1968.

The client has over 28 years of service, including SDA Cyprus.

" VAC would consider his chronic sun exposure to be, as least as likely as not, a significant risk factor for the development of metastatic melanoma."

Entitle to earliest SDA service.

7. Member served for a little over 2 years between 1950-52 with 14 months in Korea. Would client have had intense sun exposure for sufficient time in Korea to contribute to development of skin cancer?

Korea zone 0.75 Greater than 12 months

This client has sufficient service related chronic sun exposure, including service in Korea, to be considered a significant risk factor for skin cancer.

Entitle to SDA Korea