

H. pylori Infection in Northern Canada

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Northern Canada



http://images.google.com/Map_Canada_political-geo.png

Political Definition

- Northern Territories
 - Nunavut
 - NWT
 - Yukon

Physiographic Definition

- North of Tree Line
 - Most of Nunavut
 - Northern parts of
 - NWT
 - Yukon
 - Manitoba
 - Ontario
 - Quebec
 - Labrador

People of Northern Canada



	% Aboriginal
Nunavut	85
NWT	51
Yukon	23
Manitoba	14
Saskatchewan	14
Alberta	5
BC	4
Ontario	2
Quebec	<1

http://images.google.com/Map_Canada_political-geo.png

People of Northern Canada

❖ 2006 Population

■ Nunavut	29,474
■ Northwest Territories	41,464
■ Yukon	30,372
	<hr/>
	101,310

People of Northern Canada

❖ Life expectancy from birth in 2002

	Men	Women
▪ Nunavut	67.2	69.6
▪ Northwest Territories	73.2	79.6
▪ Yukon	73.9	80.3
▪ <i>Canada</i>	<i>77.2</i>	<i>82.2</i>

People of Northern Canada

- ❖ Aboriginal Groups (2001 Census Data)
 - ❖ North American Indian (First Nations)
 - ~29% of Northwest Territories population
 - ~20% of Yukon population
 - ❖ Metis (mixed European and First Nations ancestry)
 - ~10% of Northwest Territories population
 - ❖ Inuit
 - ~85% of Nunavut population
 - ~12% of Northwest Territories population

People of Northern Canada

- ❖ Inuit (~45,000)
- ❖ Live mainly in coastal Arctic towns of 500-3,000 inhabitants
- ❖ Major settlement areas
 - Nunavut (~23,000)
 - Nunavik, northern Quebec (~8,000)
 - Nunatsiavut, northern Labrador (~4,500)
 - Inuvialuit, western Arctic, NWT (~5,000)

H. pylori Prevalence in Canada

Multi-ethnic Populations

Place	Population	Age (yrs)	n	HP+%
Nova Scotia <i>Van Zanten 1994</i>	Health insurance registry	18-72	316	38
Manitoba <i>Perez-Perez 1997</i>	Healthy persons	>20	469	35
6 provinces <i>Thomson 2003</i>	Dyspeptic patients, 49 family doctor practices	18-86	1013	30
4 provinces <i>Jacobson 2005</i>	Endoscopy patients, 4 academic centres	5-18	246	5
Southern Quebec <i>Hodgins 1998</i>	Births (cord blood)	Maternal	99	10

H. pylori Prevalence in Canada

Aboriginal Populations

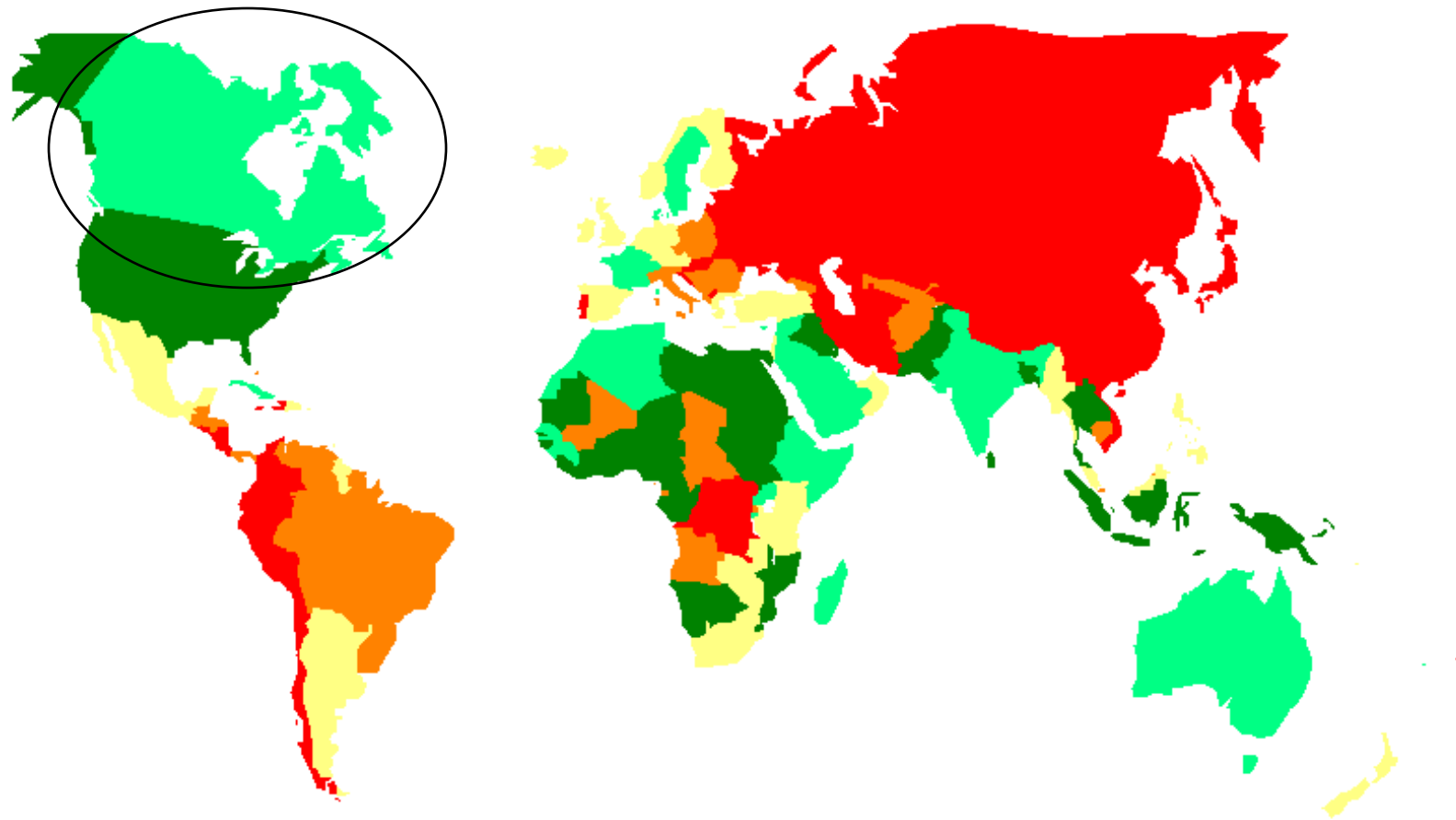
Place	Population	Age (yrs)	n	HP+%
Northern Quebec <i>Hodgins 1998</i>	Nunavik Inuit births	Maternal	100	27
Northern Manitoba <i>Bernstein 1999; Sinha 2002</i>	Wasagamack Cree (First Nations) village	Adult	306	95
		0-12	163	56
Nunavut <i>McKeown 1999</i>	Inuit communities	All ages	256	51
		0-15	28	32
Northwest Territories <i>Goodman, unpublished</i>	Inuvialuit (Inuit) & Gwich'in (First Nation) hamlet	All ages	333	58
		0-14	64	52
Inuvialuit Settlement Region <i>IRC IHS Final Report 2010</i>	Inuit Communities	<40	77	27
		>40	131	47

H. pylori Prevalence in Other Circumpolar Populations

Place	Population	Age (yrs)	n	HP+%
Chutkotka, Russia, <i>Reshetnikov 1998</i>	Chutkotka Native coastal Arctic village, males	Mean=32	34	77
Nuuk, Greenland <i>Milman 2003</i>	Population survey	22-76	71	47
Sismiut, Greenland <i>Koch 2005</i>	Population-based sample	15-87	685	58
Norton Sound, Alaska <i>Zhu 2006</i>	Rural Alaska Native villages	All ages 0-24	610	80 72

Gastric Cancer Mortality in Canadian Men

Stomach, Males
Age-Standardized mortality rate per 100,000

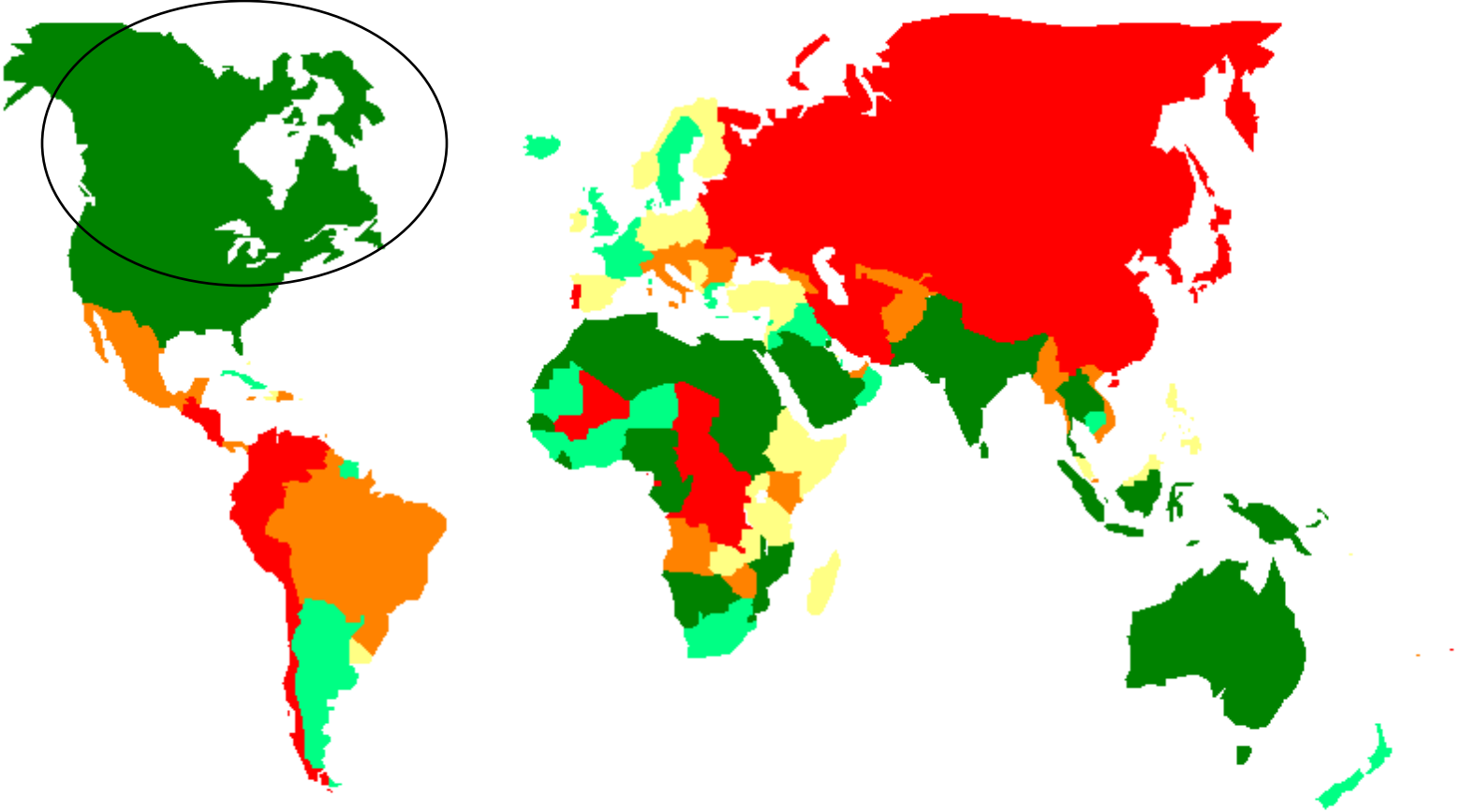


■ < 4.4 ◻ < 7.1 ◻ < 11.4 ◻ < 17.8 ◻ < 37.1

GLOBOCAN 2002, IARC

Gastric Cancer Mortality in Canadian Women

Stomach, Females
Age-Standardized mortality rate per 100,000



GLOBALCAN 2002, IARC

Little Data on *H. pylori*-associated Disease in Northern Canada

❖ Peptic Ulcer Disease

- ❖ Increased ratio of gastric ulcer to duodenal ulcer
 - ❖ Inuit of northern Labrador (*William 1985*)
 - ❖ Also observed in studies of
 - Alaska Natives (*Thompson 1975; Sacco 2007*)
 - Native Greenlanders (*Ingeman-Nielsen 1990*)
 - residents of Arctic Norway (*Eriksen 1995*)

Little Data on *H. pylori*-associated Disease in Northern Canada

- ❖ Study of Registered Indians in Manitoba
(province-wide data for 1989-1993) (*Bernstein 1999*)
 - ❖ Increased hospitalizations associated with peptic ulcer disease diagnoses
 - ❖ Registered Indians had nearly 2x rate of other persons
 - ❖ No increase in gastric cancer

Note: no data specific to Northern Manitoba

Gastric Cancer in Northern Canada

❖ Statistics Canada, 1997-2006

- ❖ Annual number of new stomach cancer cases *suppressed for low counts*

No. of years with cases registered

	<i>Men</i>	<i>Women</i>
■ Yukon	10	9
■ NWT	9	7
■ Nunavut	8	4

Gastric Cancer in Northern Canada

❖ Northwest Territories, 1990-2000

(Cancer in the Northwest Territories. NWT Health and Social Services, 2003)

- Age-adjusted incidence rate for NWT males 2x Canadian rate
- 4th most frequently diagnosed cancer in NWT males
 - *versus 10th for males across Canada*
- Accounts for 7% of potential years of life lost due to cancer for both men and women
 - *versus 2.7% for men and 2.2% for women across Canada*

Gastric Cancer in Northern Canada

❖ Northwest Territories, 1992-2000

(Cancer in the Northwest Territories. NWT Health and Social Services, 2003)

- 22 cases diagnosed in NWT males
 - 6.6% of total cancer cases in males

- Comparing incidence rate in regional centre men (higher % aboriginal) to men across Canada, standardized incidence ratio:
 - 2.9 (95% CI, 1.3, 5.5) (*based on 9 cases*)

Gastric Cancer in Northern Canada

❖ Northwest Territories, 1990-2000

(Cancer in the Northwest Territories. NWT Health and Social Services, 2003)

- In Dene (Athabaskan First Nations) males
 - 3rd place (tied with prostate) at 7% of cancers diagnosed
 - 10% of cancer deaths
- In Inuit males
 - 2nd (after lung) at 16% of cancers diagnosed

Gastric Cancer in Northern Canada

❖ Northwest Territories, 1998-2007

(Source: NWT Health and Social Services)

– 2006 population ~41,000

New Cases of Stomach Cancer			
	Men	Women	Total
Total	19	13	32
<60 years	7	6	13
>=60 years	12	7	19

Gastric Cancer in Northern Canada

❖ Yukon, 1997-2006

(from Brendan Hanley, Medical Officer of Health, Yukon;
data source: BC Cancer Agency)

– *average population ~31,000*

- 17 new cases of gastric adenocarcinoma
 - 11 in men
 - 6 in women