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Death: What are the odds?

Your chances of being struck down by West Nile virus are a comfortable 10 million to one, but the risk of a less exotic demise is considerably greater. A look at the likeliest forms of quietus in 2003

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National Post

Every year, motley groups of college students, journalists and the otherwise bored put together death pools. Most of them work along similar lines: Which famous people will die this year? Margaret Thatcher? The Pope? The odds in these death pools are organized along basic lines: Those public figures closest to death get the shortest odds. There are all kinds of categories, such as famous disgraced athletes (Pete Rose, O.J. Simpson) and even famous lesbians (k.d. lang, Martina Navratilova). Dozens of Internet sites cater to this morbid pastime.

But more adventurous, clinical minds may be drawn to the odds of death by a particular cause. How will you die in 2003?

The odds of dying of West Nile virus in Canada, for example, would appear to be about 10 million to one, given three deaths were caused by this much publicized virus this year. But the risk of more workaday, garden-variety deaths is considerably greater. And risk changes.

"Consider AIDS," noted the maverick U.S. gene scientist Craig Venter, following a speech in Toronto this year. "Ten years ago, it was a death sentence; now it's a chronic illness."

Before venturing into speculation like this, it's worth gaining a little knowledge about odds.

Despite years of medical progress, heart disease and cancer are still the country's biggest killers. Life expectancy is on the rise, although Canadians are not necessarily healthier. The truth is we've become a nation of outpatients, reliant on greater numbers of pills, dialyses and transplants to keep us alive.

"The major causes of death in the Western world have been coming down," says John Frank, scientific director of Canada's Institute of Population and Public Health. "That's heart disease, that's injuries in general, it's perinatal conditions of infancy."

If you're a male, the good news is your risk of dying of a heart attack is going down. In 1989, 200 of every 100,000 males died of heart disease, Canada's number one killer. That rate fell by more than a fifth to 156.4 deaths in 1999. The improvement has not been as dramatic for women, falling to 124 for every 100,000 females from 147 in 1989.

"I think it is testimony to some of the treatments that we have," says Dr. Andrew Wielgosz, a spokesman for the Heart and Stroke Foundation of Canada. "It's a combination of beta blockers, ACE inhibitors, anti-thrombotics like Aspirin, and the statins, which are for lowering cholesterol."

Does this mean people are healthier? Not really. Drugs and cardiologists may just delay the inevitable.

"The question is, how much [heart disease] are we preventing and how much are we treating and deferring?" says Dr. Wielgosz.

Death rates are also falling because ambulance crews and emergency medical technicians are getting faster at delivering heart attack and stroke patients to hospitals. Indeed, one U.S. researcher credits the lightning speed of ambulance crews and miraculous work of ER doctors for the decline in American murder rates. Without the heroic work of medics, there would be an estimated 30,000 to 50,000 more deaths by violent means each year in the United States.

Thanks to shifts in tobacco consumption in the 1970s, men are also reducing their odds of a cancer death.

"One of the most dramatic things that has happened is the reduction in lung cancer [deaths] among men," says Dr. Barbara Wylie, a spokeswoman for the Canadian Cancer Society. "Death rates have dropped by 16% since 1984, and incidence rates have dropped by 10.5% since 1993."

By contrast, lung cancer rates for women are rising. Lung cancer killed 30 out of every 100,000 women in 1989. The number rose to 42 in 1999, surpassing breast cancer as the leading cancer killer of females. Cancer experts find the figures discouraging. Smoking will shorten the odds of disease for women, from cancer and heart disease to osteoporosis, for decades to come.

Once a longshot, the odds of dying of non-Hodgkin's lymphoma, a cancer of white blood cells, have shortened substantially.

"It has doubled in both incidence and mortality since 1973 in both sexes, so that's a stat that people are paying attention to now," says Dr. Wylie.

There is little certainty in the medical community about what causes the disease, which is more common in North America and Eastern Europe. Dr. Wylie says some viruses, such as Epstein-Barr, as well as pesticides, have been linked to the cancer.

Among the most discouraging odds, especially in an era when Prozac-like anti-depressants have transformed mental illness, is the unchanging rate of male suicide.

"It's flat as a pancake," reports Dr. Frank, with the death rate hovering at about 21 per 100,000 men. Suicide experts say this shows that among men, at least, self-destructive urges are not necessarily caused by depression, noting "suicidality" appears to run in families.

In the coming years, some odds are expected to shift sharply. Take diabetes. Scientists in

Edmonton have proved that a transplant of islet cells, combined with a mild regimen of immunosuppressants, can cure Type 1 diabetes, making a death due to diabetic complications an increasing longshot. This has already translated into treatment for a lucky few, and as techniques for growing, harvesting and storing islet cells improves, many more can expect to be delivered from Type 1 diabetes.

On the other hand, malaria is on the rise. The small but steady number of malaria deaths in Canada indicates the rate of accidental importation of disease will only grow. It is a function of jet travel, made worse by the fact that so many poor countries are in a state of civil strife or open war. Health services have broken down, and rising number of people are walking around with undetected and untreated sickness in these countries.

Some will end up on planes as refugees, carrying malaria, tuberculosis, diphtheria and other diseases.

What about global warming and pollution? Don't they shorten our odds? Are we being slowly poisoned by our surroundings?

"The perception is certainly that it's worse, but I don't think that's the reality," says Steve Hruddy, a University of Alberta professor of environmental health and co-author of the 1997 book *Risk of Death in Canada*. "Our drinking water quality is better than it's ever been before. The one issue that's a sticking point is air quality in urban centres. There seems to be an emerging body of evidence to suggest that we are putting our health at risk by ignoring increasing levels of air pollution. But to say that our current levels are serious compared to a few decades ago I think would be wrong."

One big factor in weighing the odds, so to speak, is the astonishing rise in the national body weight.

"None of the death rates yet show the effect of the really scary epidemic of overweight and obesity in Canada, and particularly among young people," says Dr. Frank. "In order to get people to understand it, I have to say,

'You must have been concerned about the rise of HIV infection in Canada during the 1980s?' Well, the total rise is still way under 1% in the general population."

By contrast, obesity among boys has risen in the past 15 years to 13.5% from 5% -- nearly a tripling. The obesity rate for girls has more than doubled.

"And those aren't just heavy kids, those are seriously heavy kids," says Dr. Frank. "The overweight [rate] has gone up to nearly one in three boys and one in four girls. That's not just a few people. If those people can't turn it around, they're going to have major consequences by their thirties."

The best bet? Some things don't change. Put your money on an overweight smoker. It's easy money.

HOW THE TOP 10 HAVE CHANGED ...

LEADING CAUSES OF DEATH BY DISEASE AMONG MALES IN 1989 (PER 100,000)

- 1) Heart disease -- 200.3
- 2) Lung cancer -- 73.2
- 3) Stroke -- 47.4
- 4) Chronic airway obstruction (asthma, emphysema, etc.) -- 27.8
- 5) Flu and Pneumonia -- 24.8
- 6) Colorectal cancer -- 23.6
- 7) Suicide -- 20.8
- 8) Diabetes-- 14.1
- 9) Hereditary and degenerative nerve disease (Parkinson's, etc.) -- 12
- 10) Cirrhosis and liver disease -- 11.7

LEADING CAUSES OF DEATH BY DISEASE AMONG MALES IN 1999 (PER 100,000)

- 1) Heart disease -- 156.4
- 2) Lung cancer -- 68
- 3) Stroke -- 42.2
- 4) Chronic airway obstruction -- 30.7
- 5) Flu and Pneumonia -- 27.9
- 6) Prostate cancer -- 23.8
- 7) Suicide -- 21.3
- 8) Diabetes -- 20.3
- 9) Cirrhosis and liver disease -- 9.2
- 10) Alzheimer's disease -- 6.1

LEADING CAUSES OF DEATH BY DISEASE AMONG FEMALES IN 1989 (PER 100,000)

- 1) Heart disease -- 147.4
- 2) Stroke -- 62.1
- 3) Breast cancer -- 34.5
- 4) Lung cancer -- 29.9
- 5) Flu and Pneumonia -- 25.9
- 6) Diabetes -- 15.5
- 7) Hereditary and degenerative nerve disease -- 13.5
- 8) Chronic airway obstruction -- 13.2
- 9) Kidney disease -- 7.4
- 10) Cirrhosis and liver disease -- 5.4

LEADING CAUSES OF DEATH BY DISEASE AMONG FEMALES IN 1999 (PER 100,000)

- 1) Heart disease -- 123.4
- 2) Stroke -- 58.7
- 3) Lung cancer -- 41.8
- 4) Flu and Pneumonia -- 31.2
- 5) Breast cancer -- 30.9
- 6) Chronic airway obstruction -- 21.6
- 7) Diabetes -- 20
- 8) Senile and presenile dementia -- 12.9
- 9) Alzheimer's disease -- 12.6
- 10) Cirrhosis and liver disease -- 4.5

Source: Statistics Canada

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ODDS ARE: In the '90s, lung cancer deaths dropped dramatically for men but rose for women. Lung cancer now kills more woman than breast cancer.

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