Figure 2.14. SURVEY SAMPLING: Illustrative Newspaper Articles

This Figure 2.14 presents sixteen newspaper articles from 1993 involving survey sampling and related matters of statistical interest; one use of these articles is as a basis for group discussion of the statistical issues they raise.

EM9302: The Toronto Star, January 15, 1993, page D15

Fertility drugs may be linked to ovarian cancer

By Donna Alvarado
SPECIAL TO THE STAR

Fertility drugs may triple a woman's risk of developing ovarian cancer, a rare but deadly form of cancer, a Stanford University researcher reports.

The finding, which researchers called "by no means certain," is based on an analysis of 12 studies of ovarian cancer conducted over the last 35 years.

Alice Whittemore, the epidemiologist who headed the project, says she hopes the report would not be "unduly alarming" to women taking fertility drugs because researchers are uncertain what their findings mean.

"There's a need to track this down and find out what's going on," said Whittemore. The report was published this week in the *American Journal of Epidemiology.*

Because the data analyzed were taken from studies done over so many years, the women may have been taking different kinds of fertility drugs from those on the market today. "They don't know what they were given," Whittemore said.

U.S. National Cancer Institute officials called the report "provocative" but in need of further study.

Whittemore said: "It doesn't mean we have any clue whether it's based on a cause-and-effect association." But, "it's a cause for concern because it's biologically plausible."

Ovarian cancer is relatively rare. Women born today have a lifetime chance of 1.5 per cent of developing it, so even a tripled risk would still be less than 5 per cent. But it is often fatal, and only about 40 per cent of patients survive five years after they are diagnosed with the disease.

The new analysis re-evaluated data collected from 2,197 ovarian cancer patients and 4,144 comparison patients in 12 studies. It confirmed earlier findings that birth control pills reduce a woman's risk of ovarian cancer.

But it is the first time researchers have looked at large numbers of patients to examine the question of whether the cancer is linked to fertility drugs. Until now, evidence of a link had been limited to sporadic individual case reports.

Among the main findings in the report were:

- Women who are diagnosed as infertile, take fertility drugs and then get pregnant have only a slightly increased risk of getting ovarian cancer.
- Women who take fertility drugs but never get pregnant run the highest risk of getting ovarian cancer. It's possible the type of infertility they had, rather than the fertility drug itself, may be associated with the increased risk, Whittemore said.
- Pregnancy seems to protect against ovarian cancer, with the risk declining more with each successive pregnancy. Women who never become pregnant, but never use fertility drugs, have a doubled risk of getting ovarian cancer.
- Birth control pills also appear to protect against ovarian cancer, lowering the risk by 30 per cent. Long-term use of the Pill, for six years or more, lowers the risk by 70 per cent.

KNIGHT-RIDDER TRIBUNE NEWS SERVICE

REFERENCE: Whittemore, A.S., Harris, R., Itnyre, J. and the Collaborative Ovarian Cancer Group: Characteristics relating to ovarian cancer risk: collaborative analysis of 12 U.S. case-control studies. IV. The pathogenesis of epithelial ovarian cancer. *Amer. J. Epidemiology* **136**(#10): 1212-1220 (1992). See also the preceding three articles on pages 1175-1183, 1184-1203 and 1204-1211. [DC Library call number: PER RA421.A37]

Article EM9302 is included in this Figure 2.14 as a reminder that nearly *all* quantitative investigations are based on *samples*; the adjective *sample* in the phrase *sample survey* makes it easy to overlook this fact.

Article EM9303 below is included because it involves *comparison* between two groups (here, of children); such comparison with*in* a study is usually *not* a feature of sample surveys. Note that *equiprobable* (or *random*) *assignment* of the children to the two groups is explicitly mentioned in the second paragraph of the article; the similarities and differences in the statistical reasons for *equiprobable assigning* (EPA) in comparative experimental Plans and *equiprobable selecting* (EPS) in survey sampling are noteworthy – see Statistical Highlight #9, pages HL9.2 and HL9.3.

EM9303: The Toronto Star, January 16, 1993, pages G1 and G8

Studies show TV violence begets real violence

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Typical of relatively recent research is a 1977 experiment cited in *The Early Window*, involving 30 male, American, adolescent delinquents living in a minimum security institution.

The boys were randomly divided into two groups. Over a one-week period, one group was shown "aggressive" movies (such as *The Chase*, *The Champion* and *Corruption*), while the other viewed "neutral" films (*Beach Blanket Bingo* and *A Countess From HongKong*).

After observing the boys for three weeks before and after the movie week, researchers concluded that those who saw the aggressive movies behaved more aggressively in general terms (including such acts as verbal threats) and in a physical sense (actual attacks).

These kinds of findings recur when more precise techniques are used on children in common-place situations. In one such case in 1971, as reported in *The Early Window*, 10 preschoolers – boys and girls in a racially and socioeconomically mixed group – were matched into pairs based on the amount of time they spent watching TV at home.

Next, each child was observed during 10 playtime sessons to determine his or her normal level of aggressiveness. Researchers

(*continued overleaf*)

EM9303: (cont.) noted everything from simple hitting and pushing to squeezing, choking and holding down another child.

To gauge the effects of TV, one child in each pair was shown an aggressive program taken directly from the Saturday morning schedule, while the other viewed a nonaggressive program. This was done a total of 11 times.

"By the end of the 11 sessions, the two groups had departed significantly from one another in terms of the frequency of interpersonal aggression. In fact, for every pair, the child who observed aggressive television programming had become more aggressive than his or her partner who watched neutral fare."

Investigators have also looked at everyday behaviour over a longer period. For instance, *The Early Window* describes a 1984 report on 758 American and 220 Finnish first- to fifth-graders whose activities were measured for three years.

"The results showed that for boys in both countries and for girls in the United States, the more TV violence youngsters watched, the more aggressive they were in dealings with their peers."

"Equally important were the cumulative effects over time. The more TV violence a youngster watched in any given year, the more likely he or she was to display an increased aggression during the subsequent years."

REFERENCE: Liebert, R.M.: *The Early Window: Effects of Television on Children and Youth*. Pergamon Press, 3rd edition (1988). [Arts Library call number: HQ784.T4L48 1988]

EM9304: The Toronto Star, January 16, 1993, page I12

Inhaled hormones cut asthma risks, study concludes

What's New in Medicine

Marilyn Dunlop

Canadian researchers have found that the risk of fatal or life-threatening asthma attacks is significantly lowered by regular use of inhaled corticosteroids.

Dr. Pierre Ernst, of Montreal General Hospital's epidemiology and biostatistics department, and colleagues reported their findings in the *Journal of the American Medical Association*.

Corticosteriods are hormone preparations used to combat inflammation. The researchers reviewed Saskatchewan's computerized drug register to identify 12,300 residents of Saskatchewan who had been prescribed 10 or more asthma drugs between 1978 and 1987.

They found that 44 of those patients had died from asthma attacks and another 85 had suffered near-fatal attacks. The patients ranged in age from 5 to 54.

They compared the 129 fatal or near-fatal cases with 655 cases drawn from the full list. Among these patients, 269 had been prescribed inhaled corticosteroids in the previous year, but of this group only 37 had been dispensed 12 units or more.

The risk of a fatal or near-fatal attack among the 37 was only one-tenth that of patients not prescribed corticosteroids and significantly lower than those using corticosteroids less often than once a month.

"The most straightforward interpretation of this finding is that sufficient use of inhaled corticosteroids provides better overall control of asthma and less likelihood of a sudden overwhelming attack," the team said in its report.

They added that their findings provide strong support for current guidelines that recommend the use of inhaled cortico-steroids in the treatment of moderate and severe asthma.

REFERENCE: Ernst, P., Spitzer, W. O., Suissa, S., Cockcroft, D., Habbick, B., Horwitz, R.I., Boivin, J.-F., McNutt, M. and A.S. Buist: Risk of fatal and near-fatal asthma in relation to inhaled corticosteroid use. *JAMA* **268**(#24): 3462-3464 (1992). [DC Library call number: PER R15.A48]

EM9305: The Toronto Star, January 18, 1993, page A10

TAKING THE PULSE

71% approve welfare probes

FROM GALLUP CANADA

The vast majority of Canadians questioned say they believe government has the right to verify information given out by people who get welfare payments, a Gallup survey suggests.

Gallup asked 1,011 adults: "Do you think that the government should have the right to verify the information given out by welfare recipients or do you think that such a verification represents an invasion of privacy?"

Seventy-one per cent of those asked said they believed the government should be able test the information, compared with 24 per cent who said they perceived such a verification as violation of the person's civil liberties. Four per cent of respondents said they were unsure or didn't answer the question.

The results vary across the country.

Whereas 56 per cent of those questioned in the Atlantic provinces said they believe government has the right to verify the information given by people who receive welfare, 67 per cent gave that answer in British Columbia, 71 per cent in the Prairies and 76 per cent in Ontario.

In the province of Quebec, where the Li-

Do you think that the government should have the right to verify the information given out by welfare recipients or do you think that such a verification represents an invasion of privacy?

Canada

Verify **71%**

24% Invasion

4% Don't know

Regional breakdown	**Verify**	**Invasion**	**Don't know**
Atlantic	56%	35%	9%
Quebec	73	24	4
Ontario	**76**	**22**	**3**
Prairies	71	25	5
B.C.	67	28	6
Education			
Public school	55%	35%	10%
High school	66	30	3
College	73	23	4
University	82	15	3

Note: Percentages may not add exactly to 100, due to rounding.

(*continued*)

Figure 2.14. SURVEY SAMPLING: Illustrative Newspaper Articles (continued 1)

EM9305: (cont.) beral government is contemplating just such a move, 73 per cent of Quebecers said they believe the government has the right, while 24 per cent of those questioned see such a verification as an invasion of privacy and 4 per cent said they were unsure.

Education and sex appear to be factors in this matter.

Whereas 55 per cent of respondents with public school education believe the government has the right to verify information it gets from people who receive welfare, this figure increases to 66 per cent among those who attended high school, 73 per cent among those who attended college and to 82 per cent among those with a university education.

And whereas 76 per cent of male respondents said they support the government's right to verify welfare recipients' information, this figure decreases to 67 per cent among women questioned.

Today's results are based on 1,011 telephone interviews with adults, conducted Dec. 19 to 23, 1992. A national telephone sample of this size is accurate within a 3.1 percentage point margin of error, 19 in 20 times. The margins of error are higher for the regions, reflecting smaller sample sizes. For example, in Quebec 258 interviews were conducted with a margin of error of 6.2 percentage points, 19 in 20 times.

EM9309: The Globe and Mail, January 26, 1993, page A5

MDs refuse to report suspected misconduct

Fighting 'tyranny' of sex-abuse bill

BY RICHARD MACKIE
Queen's Park Bureau

TORONTO – Most Ontario doctors say they will not go along with the province's bid to require them to report the conduct of colleagues "that could be considered to have sexual overtones", according to a survey of doctors.

"We are going to be almost afraid to open our mouths", Dr. Rachel Edney, president of the College of Physicians and Surgeons of Ontario, said yesterday.

Dr. Edney said the college also opposes a section of the legislation that would compel other workers, such as nurses, to report alleged sexual abuse by doctors or other health professionals.

The survey was released yesterday as the college escalated its attempts to persuade the government to water down proposed legislation to fight sexual abuse by doctors and members of the 23 other regulated health-care professions.

However, the college attempted to put a moderate face on the doctors' opposition by saying that almost all want mandatory reporting of suspected cases of sexual intercourse between doctors and patients.

Further, it said, four-fifths of doctors support mandatory reporting in suspected cases of touching of a sexual nature.

The fact that 41 per cent of doctors responding were in favour of mandatory reporting of sexually abusive or demeaning remarks or behaviour was cited as "a considerable degree of support" for that proposal.

But the college noted that 70 per cent of respondents strongly oppose requiring doctors to report colleagues for remarks or behaviour "that could be considered to have sexual overtones".

The statistics she cited were compiled by the college and by Insight Canada Research of Toronto. They were based on a questionnaire sent to the 28,000 doctors licenced to practise in Ontario, who make up the college's membership.

A total of 7,266 questionnaires were returned, an exceptionally high response rate of 26 per cent, according to Insight Canada chairman Michael Marzolini. He used 4,268 questionnaires to compile his results, leaving a margin of error of plus or minus 1.5 percentage points 19 times out of 20.

Health Minister Frances Lankin said she will consider any changes to Bill 100 proposed by the college, but stressed that she is determined to proceed with tough measures to combat sexual abuse by members of health professions.

"It is incorrect to say that the college wants to soften this legislation", Dr. Edney said. "Physicians clearly don't support the kind of tyranny of subjectivity envisioned in Bill 100. Furthermore, 70 percent of them have indicated that including this highly subjective category in the legislation may discourage the reporting of sexual abuse generally."

Support for reporting of sexually abusive or demeaning remarks would increase, she suggested, "if clear, fair and understandable legislative definitions could be assigned to this form of sexual abuse".

EM9310: The Toronto Star, February 2, 1993, page A10?

TAKING THE PULSE

Most wary of recovery, poll suggests

FROM GALLUP CANADA

The signs of slow economic recovery don't appear to be enough to convince Canadians that business conditions are improving, a Gallup survey suggests.

Gallup asked 1,031 adults "How would you describe business conditions in your region? Would you say they are very good, good, not too good or bad?"

Only 29 per cent of those questioned said they thought business conditions were very good or good; 69 per cent said they were not so good or bad while 1 per cent of respondents did not answer.

This is, by far, the lowest level recorded by Gallup Canada.

During the recession in 1982, 40 per cent of those questioned said they thought business conditions were good; 55 per cent of respondents said they were bad and 6 per cent didn't know or didn't answer. During the economic boom in 1988, the last time Gallup asked this question, 73 per cent said they

How would you describe business conditions in your region? Would you say they are very good, good, not too good, or bad?

Canada	Very good/ good	Not too good/bad	Don't know
Today	29%	69%	1%
1988	73	24	3
1985	66	30	4
1982	40	55	6
1978	61	33	6
1975	58	38	4
Regional breakdown			
Atlantic	26%	74%	
Quebec	33	65	2%
Ontario	**24**	**74**	**1**
Prairies	25	72	2
B.C.	48	49	2

Note: Percentages may not add exactly to 100, due to rounding.

(*continued overleaf*)

EM9310: (cont.) believed business conditions were good while 24 per cent said they were not so good or bad and 3 per cent didn't answer or said they didn't know.

Ontarians are the most pessimistic in their answers: 24 per cent said they believed business conditions were good, compared to 74 per cent who didn't.

In the Prairies, 25 per cent of respondents said they consider business conditions to be generally good, while 26 per cent in the Atlantic provinces, 33 per cent of Quebecers, and 48 per cent in British Columbia gave that answer.

More men than women said they thought business conditions were good, although both groups were the minority. Thirty-two per cent of men questioned gave that answer, compared with 27 per cent of women.

Today's results are based on 1,031 telephone interviews with adults, conducted Jan. 13 to 18. A national telephone sample of this size is accurate within a 3.1 percentage point margin of error, 19 in 20 times. The margins of error are higher for the regions, reflecting smaller sample sizes. For example, in Quebec 262 interviews were conducted with a margin of error of 6.2 percentage points, 19 in 20 times.

EM9311: Kitchener-Waterloo Record, February 6, 1993, page A10

Most support gay rights, poll says

OTTAWA – Most Canadians believe gays and lesbians should be protected from discrimination but shouldn't be allowed to legally marry, says a poll released today.

Almost two out of every three Canadians, or 64 per cent, support recently introduced amendments to the Canadian Human Rights Act while 28 per cent oppose them, according to the Angus Reid-Southam News poll. Eight per cent were unsure.

The bill, tabled after years of promises by the Conservative government, would add sexual orientation to the list of prohibited grounds of discrimination in federal jurisdictions.

But the changes would also define marriage as the union between a man and a woman, thus limiting protection from discrimination based on marital status to opposite-sex couples.

The Reid poll, conducted Jan. 20-30, found 56 per cent of respondents don't believe gay marriages should be legally recognized, although 37 per cent feel same-sex couples should be included in the definition of marriage. Seven per cent were unsure.

Support for extending legal protection from discrimination is high in all walks of life and in all parts of the country.

Alberta, which is embroiled in its own gay rights contoversy, has the lowest support, at 52 per cent, followed by Manitoba-Saskatchewan (55 per cent), the Atlantic provinces (58) and Ontario (61).

People in Quebec and British Columbia – which already outlaw discrimination against homosexuals – are the most enthusiastic supporters of the changes at 75 and 68 per cent, respectively.

Support is also highest among young people (70 per cent of those between 18 and 34 and 67 per cent of people between 35 and 54) and those with higher education (73 per cent of those with a university degree and 67 per cent of those with some post-secondary education).

Women are also more inclined to support the changes than men, at 69 per cent versus 58 per cent.

Reid also found that while more than half of Canadians of all political stripes endorse the anti-discrimination change, only 28 per cent of those who support the Reform party agree.

The inclusion of gay and lesbian unions in the legal definition of marriage has the greatest number of backers in Quebec, where 42 per cent support it and 54 per cent are opposed, and among university graduates, with 46 per cent in favour and 47 per cent against.

Canadians under age 35 are evenly divided on the issue (49 per cent in favour and 45 per cent against).

EM9313: The Toronto Star, February 15, 1993, page D7

TAKING THE PULSE

64% of Canadians want own business, poll says

FROM GALLUP CANADA

Almost two-thirds of Canadians would start their own businesses, if they had the option, a Gallup survey suggests.

That figure of 64 per cent is a seven percentage point increase since 1983, the last time Gallup asked the question.

Thirty-two per cent of those questioned said they prefer to work as an employee in a company, down seven percentage points since 1983.

Four per cent of those questioned said they didn't have an opinion.

Although a majority of those questioned in all regions said they would prefer to be their own boss, if they had the possibility to choose, the results vary across the country.

Whereas 69 per cent of residents in the Atlantic provinces said they would like to start their own business, this figure decreases to 66 per cent in the Prairies, 64 per cent in Ontario, to 62 percent in Quebec and to 61 per cent in British Columbia.

Age and education appear to make a difference to people's answers Whereas 69 per cent of those questioned aged 30 to 39 and 68 per cent of those between 18 and 29 said they would choose to start their own company, if they could, this figure decreases to 65 per cent among respondents between 40 and 49, sixty-four per cent for those between 50 and 64 and to 47 per cent among respondents 65 years and older.

While 57 per cent of respondents with an elementary school education said they would prefer to start their own business, 60 per cent of respondents with a high school education and 63 per cent of those with a college education said they would prefer to be

If you had the possibility to choose, which of these would you prefer: to start your own business or work as an employee in a company?

	Start own business	Work as employee	Don't know
Canada			
Today	64%	32%	4%
Age			
18-29	68%	31%	1%
30-39	69	30	2
40-49	65	34	1
50-64	64	33	3
Over 65	47	35	18

Note: Percentages may not add exactly to 100, due to rounding.

(*continued*)

Figure 2.14. SURVEY SAMPLING: Illustrative Newspaper Articles (continued 2)

EM9313: (cont.) their own boss, if they had the option. Seventy-two percent of respondents who attended university said they would rather start their own business than work as an employee in a company.

Today's results are based on 1,024 telephone interviews with adults, conducted Jan. 24 to 26, 1993. A national telephone sample of this size is accurate within a 3.1 percentage point margin of error, 19 in 20 times. The margins of error are higher for the regions, reflecting smaller sample sizes. For example, in Quebec 264 interviews were conducted with a margin of error of 6.2 percentage points, 19 in 20 times.

EM9316: Kitchener-Waterloo Record, February 20, 1993, page A5

Many farm wells contaminated, new study confirms

By Jim Romahn
Record staff

A second province-wide survey of 1,245 farm wells has confirmed that more than a third are contaminated with coliform bacteria at levels that health officials consider a threat to human health.

Health officials say coliform bacteria are not the main threat, but their presence is a warning of other, more dangerous disease-causing bacteria and viruses that could be in the same water.

While the percentage of contaminated wells has remained about the same, some of the wells that were fine in the first survey, in the late fall and early winter of 1991, were contaminated by the time of the second survey last July.

The survey included wells in Waterloo Region, and the counties of Wellington, Perth, Bruce, Grey and Huron.

"We like to think people took action" after they got the results from the first round of tests, said Harold Rudy of the Ontario Soil and Crop Improvement Association.

Only 60 per cent of those wells contaminated in the first survey were still contaminated with coliform bacteria this time around.

Michael Goss of the University of Guelph said some farmers drilled new wells and others who had two on the farm switched after the 1991 results came out.

Based on that, Goss felt the second survey would have shown a decline to about 20 per cent of the wells.

But in fact a lot of wells that were fine the first time showed up as contaminated with coliform bacteria last July. Goss said that also "tells us the incidence of bacterial contamination is rather ephemeral" and serves as a warning to rural people to keep checking the quality of their well water.

According to the World Health Organization, water is unfit for human consumption if it contains 10 colonies of total coliform bacteria in 100 millilitres of water. Some wells tested at 80 colonies per 100 ml, the maximum upward limit for the test.

There are two types of coliform bacteria, one associated with rotting plants, the other called fecal coliform that are associated with manure from livestock, poultry and people.

This time, 26 per cent of the farm wells exceeded national tolerance levels for fecal coliform, up from 20 per cent in the first survey.

The rate of nitrate contamination remained about the same – 14 per cent compared with 13 per cent – but the concentration increased.

Goss said he's not surprised that the incidence remained the same because nitrates move slowly through the soil, but he said it is worrisome that concentration levels increased. It remains to be seen whether that's a seasonal difference or reflects a long-term trend, he said.

Rudy said the survey results continue to confirm what experts expected, based on similar surveys in the U.S. and parts of Ontario.

EM9317: The Globe and Mail, February 25, 1993, page A19

Street drug use waning in Metro

But researchers say size of problem among youths rules out complacency

BY GAY ABBAE
Regional Police Reporter

TORONTO – Drug use among the youths who frequent the streets of Metro is declining but, compared with the consumption by young people still in school, it remains very high, according to responses to a new survey.

Although statistics suggest that drug-awareness programs are having some impact in the fight against drug abuse, the third annual report of the Metro Toronto Research Group on Drug Use, released yesterday, warns against complacency.

"We've only made a dent in the problem," reports Drug Use in Metro Toronto.

The data were prepared by a coalition of 10 agencies and organizations, among them the Addiction Research Foundation, Metro Toronto Police and the Drug Prevention Centre.

Of 217 street youths interviewed in 1992, 31 per cent said they had used cocaine in the past year, down from 64 per cent in 1990. The reported use of heroin among steeet youths dropped to 4 per cent from 13 percent over the same period.

Among Metro students aged 12 to 19, the use of cocaine dropped 1 per cent to 2.4 per cent in 1991 from 1989, the use of LSD dropped 0.6 per cent to 3.9 per cent, and the use of cannabis dropped 2.4 per cent to 10.1 per cent over the same period, according to the respondents.

(Data for the two study groups – street youth and students – were collected in different periods.)

Mark Taylor, president of the Addiction Research Foundation, told reporters that the number of people who sought help at the ARF for cocaine addiction rose to 21.8 per cent last year from 17.8 per cent in 1991. And the number of clients under 26 years of age seeking treatment for heroin addiction jumped to 5 per cent in 1992 from 1 per cent in 1990.

He also noted that the number of young clients seeking help for problems with hallucinogens rose from 1 per cent in 1991 to 4 per cent last year, the largest increase since 1985.

Although drug use as a whole has declined among both street youths and students, Ontario's chief coroner Dr. James Young said there has not been a corresponding drop in the number of drug-related deaths.

There were 32 heroin-related deaths reported in Metro in the first nine months of 1992. For all of 1990, the last year for which the report gives complete statistics on drug-related deaths, there were 40 heroin-related deaths. That year a total of 166 drug-

(*continued overleaf*)

EM9317: (cont.) related deaths were recorded and included use of cocaine, heroin, marijuana, sedatives, hypnotics and tranquillizers. In 1989, there were 150.

Metro Police Superintendent Leo Campbell told reporters that police are concerned about the proliferation of high-potency marijuana on the streets.

In the 1960s and 1970s, the potency of marijuana was measured at between 0.5 per cent to 3 per cent, but in 1992 police have recorded levels as high as 18 per cent, Supt. Campbell said.

"You can no longer say it's just a soft or mild drug."

EM9318: Winnipeg Free Press, February 28, 1993, page B4

Sweat off chance of getting diabetes

By Ira Dreyfuss
The Associated Press

WORKING UP a sweat can lower your odds of developing diabetes.

Experts say exercise reduces the risk of getting the most common form of the disease, adult-onset diabetes.

Men and women who keep active reduced their risk by about one-third, says Dr. Jo Ann Manson, a researcher at Harvard Medical School and Boston's Brigham and Women's Hospital, which is affiliated with the school.

Researchers are not sure how much exercise or which type works best, but the benefit seems to rise with more effort, she says.

In a study of more than 27,000 male physicians across North America, those active enough to sweat at least five times a week had a 42 per cent reduction in diabetes risk, she says. The rate dropped to 38 per cent for those active two to four times a week, and 23 per cent for those who were active only once a week.

The overall benefit for men was a 36 per cent reduction, she says.

A similar study involving more than 87,000 nurses found overall risk of diabetes dropped about one-third for those who exercised at least once a week, Manson says.

The women studied did not parallel men in seeing greater risk reductions with more exercise, but the researcher says this may be more a problem with the data than a real lack of benefit.

"I don't think there was a true biological difference," she says.

Exercise reduces the size of fat cells, and obesity is a major risk factor for diabetes, says Dr. Walter Willett, an epidemiologist and a colleague of Manson's.

But exercise also seems to have a separate benefit in making cells more sensitive to insulin and thereby better able to process sugar, he adds.

In adult-onset diabetes, cells' receptors for the hormone insulin malfunction. Because the receptors tell cells to absorb the sugar glucose, their loss cuts the ability of muscles to draw in glucose for fuel, he says. This leaves excess glucose in the blood.

When you exercise, Willett says your muscles somehow become better at getting glucose, which lowers the excess blood sugar, and if you exercise regularly, you build muscle which adds to the effect.

One good workout can increase insulin sensitivity for 24 to 36 hours, but the benefit fades afterward, says researcher Karen Segal of Cornell University Medical Center at New York Hospital in New York City. She thinks the lingering value of exercise is in reducing fat.

Segal and her colleagues had 10 normal lean men, 10 normal obese men and six obese diabetic men exercise vigorously for one hour a day, four days a week, for 12 weeks. The researchers kept the men's weight steady by making sure they ate as many extra calories as the exercise burned off.

At the end, the men were, on average, 27 per cent more physically fit, but none had a greater sensitivity to insulin that remained longer than the typical 36 hours, she says.

"If you want to exercise," Segal says, "the objective should not merely be to increase fitness but it should be performed regularly, so you are always in the post-exercise state."

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EM9319a: Kitchener-Waterloo Record, March 4, 1993, page A1

Get cracking on walnut diet to cut cholesterol, study says

Los Angeles Times

LOMA LINDA, Calif. – Remember the oat bran craze? Get ready for walnuts.

In a study that is bound to generate interest among nutritionists and cardiologists – not to mention health-conscious consumers – researchers at Loma Linda University report that walnuts reduce cholesterol levels in the blood and protect against heart disease.

The study found that men who consumed a diet rich in walnuts showed a 16 percent drop in so-called "bad" LDL cholesterol, although their so-called "good" HDL cholesterol also dropped, by five per cent. More important, however, is that the study found a beneficial 12 per cent decrease in the ratio of bad to good cholesterol among men who were fed the walnut diet.

However, some nutritionists and heart experts expressed skepticism about the usefulness of the study which appears in today's *New England Journal of Medicine* and was financed by the California Walnut Commission, an agency that helps market walnuts.

According to these experts, it would be nearly impossible – and unwise – for consumers to duplicate the walnut diet, in which

(*continued*)

Figure 2.14. SURVEY SAMPLING: Illustrative Newspaper Articles (continued 3)

EM9319a: (cont.) 20 per cent of the calories came from walnuts. The diet included three ounces of the nuts a day – slightly more than 68 pounds a year if eaten on a daily basis – and even the study's authors acknowledged that the diet is impractical.

"It was an extreme diet; they made everything out of walnuts," said Walter Willett, a professor at the Harvard School of Public Health who studies the links between nutrition and disease. "I definitely would not recommend that as a pattern."

Willett also noted that other nuts may be equally beneficial – a statement with which the study's authors concurred.

"I have this worry about some guy who just finishes this enormous filet mignon and has a hot fudge sundae and then orders walnuts, saying, 'This will cover me, this is the magic bullet'," said Dr. William Castelli, director of the well-known Framingham Heart Study. "That's not what they found in this study. You have to substitute."

EM9319b: The Toronto Star, March 4, 1993, page A2

Eating nuts helps heart, U.S. researchers report

BOSTON (AP) – Could the next health craze be – quite literally – nuts?

A new study concludes that nuts lower cholesterol.

Just how is a matter of dispute. But researchers have assembled two different lines of evidence suggesting that nuts in general, and walnuts in particular, are good for the heart.

"Including walnuts in the everyday diet may be an easy way to lower the risk of heart disease by improving the cholesterol profile," says Dr. Joan Sabaté of Loma Linda University, who directed the latest study.

The study, funded by the California Walnut Commission, is published in today's *New England Journal of Medicine*.

The story began with a study of 31,208 Seventh-day Adventists, who generally avoid smoking and drinking. Researchers questioned them about their consumption of 65 different foods.

To researchers' surprise, those who ate nuts at least five times a week had only half the risk of fatal heart attacks as those who had nuts less than once a week.

That discovery was published last summer in the *Archives of Internal Medicine*. The latest evidence, from the same team, strengthens the case.

This time, the researchers put 18 healthy volunteers on two carefully controlled diets for two months. One was a nut-free version of a standard low-cholesterol diet. The other was nutritionally similar, except 20 per cent of the calories came from walnuts.

On the no-nuts diet, the volunteers' cholesterol levels fell 6 per cent. When they switched to the walnut diet, their cholesterol declined an additional 12 per cent. Everyone's cholesterol dropped while eating nuts, and the average decrease was 22 points, from 182 to 160 mg/dl (473 to 415 mmol/L).

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EM9339: Kitchener-Waterloo Record, October 7, 1993, page A12

Gun in home triples murder risk

BOSTON (Reuter) – Having a gun in the home nearly triples the likelihood that someone will be murdered and the victim is usually a family member or close friend, a study of 388 homicides in three U.S. states indicates.

The research, published in Wednesday's issue of the *New England Journal of Medicine*, appears to contradict the wide-spread belief that keeping a gun at home is an effective means of personal protection.

"This study shows that the practice is counterproductive," said the research team, led by Dr. Arthur Kellermann of the University of Tennessee at Memphis.

The study involved an investigation of the causes of homicides in Tennessee, Ohio and Washington state.

The research team found that the likelihood of a homicide in the home rises when illegal drugs are used there or when physical fights occurred.

But after researchers adjusted the data for drug use and fighting, they found that the risk of homicide was 2.7 times higher in homes with guns than in homes without.

"Despite the widely held belief that guns are effective for protection, our results suggest that they actually pose a substantial threat to members of the household," Kellermann and his colleagues concluded.

At the same time, a study of cases involving forced entry showed that having a gun in the home offered little protection.

Kellermann's team reached its conclusions by gathering information from people close to the victims, and from unrelated people in the same neighbourhood who shared the same age, race and sex as the victims.

Journal editor Dr. Jerome Kassirer wrote in an accompanying editorial that the findings point out the need for stronger gun control laws and built-in improvements in firearm safety such as coded safety locks to prevent accidental firing.

Such controls are strongly opposed by the National Rifle Association, the major U.S. gun lobby group.

Even if stricter controls are adopted, the passion for guns would likely persist, Kassirer said.

He cited a letter from a West Coast surgeon who told of having "to go from the operating room to tell a young couple that their little boy was dead" – shot while playing with his father's handgun.

"The mother collapased into tears," the surgeon wrote. "The father, who told me he was an NRA member, did not cry, but became visibly angry, saying: 'I taught the dumb kid how to use it right'."

(*continued overleaf*)

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EM9340: The Globe and Mail, October 15, 1993, page C5

Mozart's piano music the key to higher IQ?

New York Times Service

Can it be that the music of Mozart is not only exalting but can also improve intelligence?

An experiment on students at the University of California at Irvine suggests that listening to 10 minutes of Mozart's piano music significantly improves performance in intelligence tests taken immediately afterward.

The finding was reported this week in the British scientific journal *Nature*.

The university researchers found that after students listened to Mozart's *Sonata for Two Pianos in D Major (K. 448)*, as peformed by Murray Perahia and Radu Lupu, their test scores were a mean of eight or nine points higher than the scores the same students achieved after listening to a recorded message suggesting they imagine themselves relaxing in a peaceful garden or to silence.

The effect was only temporary, however.

One of the researchers, Dr. Frances H. Rauscher, said in an interview that all the students were asked about their tastes in music, and that although some liked Mozart and some did not, their test scores generally improved after the music session, with no measurable differences attributable to varied tastes.

The pulse rates of the subjects did not change under any of the test conditions, so physiological arousal was not a factor in the test scores, she said.

The researchers picked Mozart, Rauscher said, because of the complex, highly structured and non-repetitive character of his music.

"Listening to such music may stimulate neural pathways important to cognition," she said, adding, "Incidentally, Mozart himself often scribbled numbers and mathematical expressions on his manuscript scores."

Thirty-six students, half of them men and half of them women, took part in the experiment. After each listening period they were given standard nonverbal IQ tests of spatial reasoning, involving questions about the geometry of paper objects shown as they would look after being folded or cut.

Rauscher said researchers in her group intended to test the effects of other kinds of music, like rock and the minimalist music of the contemporary composer Phillip Glass, for example.

They also plan to test preschool children and subjects with and without musical training.

Does the group expect controversy?

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EM9359: Kitchener-Waterloo Record, December 1, 1993, page D8

Fats raise risk of lung cancer in non-smokers

WASHINGTON (AP) – Add lung cancer to the growing list of diseases that seem to be influenced by diets high in fat.

A study by the U.S. National Cancer Institute of non-smoking women in Missouri found that those who eat diets with 15 per cent or more saturated fat are about six times more likely to develop lung cancer than those whose meals have 10 per cent or less of the fat.

"We found that as you increase the amount of saturated fat, you increase the amount of lung cancer," Michael Alavanja, an institute researcher, said Tuesday.

A report on the study is to be published Friday in the *Journal of the National Cancer Institute*.

Earlier studies have linked high-fat diets with cancers of the colon, prostate and breast. High-fat diets are also thought to increase the risk of heart disease.

Alavanja said his research compared the diets of 429 non-smoking women who had lung cancer with the diets of 1,021 non-smoking women who did not have lung cancer. The women all lived in Missouri, were of about the same age and represented "a typical American female population."

The women filled out forms that asked about their dietary habits. They were divided into five groups based on the amount of fat and other nutrients they consumed. Alavanja said the study found that those with diets with the lowest amount of saturated fat and the highest amount of fruits, vegetables, beans and peas were the least likely to develop lung cancer.

At the other end of the scale, 20 per cent of the women in the study with the highest consumption of fat and diets lowest in fruits, vegetables, beans and peas had about six times more lung cancer.

For a specific type of lung cancer, adenocarcinoma, there was an 11-fold difference between those on lowest-fat diets and those on the highest-fat diets. Adenocarcinoma is a form of lung cancer that is less often associated with smoking.

"The leading contributors of dietary saturated fat were hamburgers, cheeseburgers and meat loaf, followed by weekly consumption of cheeses and cheese spreads, hot dogs, ice cream and sausages," the study said.

Alayanja said that these foods, by themselves, cannot be considered good or bad, but that they appear to create a lung cancer risk when they represent 15 per cent or more of the calories in the diet.

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