

CHARTS: Nutrient Changes in Vegetables and Fruits, 1951 to 1999

Compiled by Jeffrey Christian for CTV News

Updated: Fri. Jul. 5 2002 5:32 PM ET

The following tables and charts show the changes that have occurred in levels of certain vitamins and trace minerals in our food supply over 50 years.

The tables were constructed following the lead of researchers in the United States and the United Kingdom. These studies have for the most part been done independently of each other. The results would seem to indicate the same occurrences in different geographic areas.

All the American and British studies followed the same basic method. Researchers would take nutrients tables as published from different time periods and compare the levels of vitamins and minerals for a given food at a given weight. This analysis uses Canadian tables as printed in 1951 and 1999 and compared the nutrients available from 100 grams of the given food type.

Wherever possible I compared raw, edible portions of the food (uncooked and unprocessed). Squash, corn and peas are the exceptions: Squash is listed only as cubed and baked, corn as boiled and drained and peas as solids from a drained can.

The 1951 tables are all based on 100 grams of edible food product. Later tables have inconsistent weights. To maintain consistency 100 grams is used as a base. For later values the weight listed (e.g. 87 grams) is multiplied by an equivalency factor ($100g/87g * x$) where x is the value of the nutrient measured). All listings in the table then are based on 100 g weights. The conversion factors are listed as comments in the electronic version.

All numbers in the chart have been rounded to two decimal places to maintain simplicity.

To flesh out the results, food tables from 1972 were added to see if the changes were consistent over the time period. While the additional tables aren't entirely consistent, they show a steady fluctuation in the nutrient value of foods. The 1972 table values generally show up in between the 1951 and 1999 tables. The bottom row, % Change, refers to total change from 1951 to 1999.

Apple, raw with skin (7 cm diameter), 138 g., $100/138=0.72$

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	6.00	0.30	90.00	5.00	0.04	0.03	0.20
1972	5.33	0.27	3.33	2.00	0.03	0.01	0.07
1999	7.20	0.14	53.00	5.80	0.01	0.01	0.14
% Change	20.00	-53.33	-41.11	16.00	-75.00	-66.67	-30.00

Banana, one medium raw, 115 g. $100/115=0.87$

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	8.00	0.60	430.00	10.00	0.04	0.05	0.70
1972	5.71	0.46	131.43	6.86	0.03	0.04	0.46
1999	6.10	0.35	81.00	8.70	0.04	0.10	0.69
% Change	-23.75	-41.67	-81.16	-13.00	0.00	100.00	-1.43

Blueberries, raw, 77g. $100/77=1.3$

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	16.00	0.80	280.00	10.00	0.02	0.02	0.30
1972	15.00	1.00	100.00	14.29	0.03	0.06	0.43
1999	6.50	0.13	100.10	13.00	0.05	0.05	0.39
% Change	-59.38	-83.75	-64.25	30.00	160.00	160.00	30.00

Broccoli, Raw, 3 spears, 93g. $100/93=1.08$

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	130.00	1.30	3500.00	104.00	0.10	0.21	1.10
1972	87.78	0.78	2500.00	90.00	0.09	0.20	0.78
1999	48.30	0.86	1542.00	93.50	0.06	0.12	1.07
% Change	-62.85	-33.85	-55.94	-10.10	-40.00	-42.86	-2.73

Carrots, one medium, raw, 80g. 100/80=1.25

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	39.00	0.80	12000.00	6.00	0.06	0.06	0.50
1972	36.00	0.80	11000.00	8.00	0.06	0.06	0.60
1999	27.50	0.50	28305.00	8.80	0.10	0.06	1.13
% Change	-29.49	-37.50	135.88	46.67	66.67	0.00	126.00

Cauliflower, raw pieces, 106g. 100/106=.94

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	22.00	1.10	90.00	69.00	0.11	0.10	0.60
1972	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1999	21.70	0.47	18.90	46.20	0.06	0.07	0.94
% Change	-1.36	-57.27	-79.00	-33.04	-45.45	-30.00	56.67

Celery, one stalk, raw, 40g. 100/40=2.5

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	50.00	0.50	1000.00	7.00	0.05	0.04	0.40
1972	40.00	0.25	100.00	10.00	0.03	0.03	0.25
1999	40.00	0.50	135.00	7.50	0.05	0.05	0.50
% Change	-20.00	0.00	-86.50	7.14	0.00	25.00	25.00

Cherries, raw, 10 cherries, 68g. 100/68=1.47

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	18.00	0.40	620.00	8.00	0.05	0.06	0.40
1972	14.80	0.28	664.00	4.80	0.03	0.02	0.20
1999	14.70	0.44	214.62	7.35	0.04	0.06	0.59
% Change	-18.33	10.25	-65.38	-8.13	-11.80	0.00	47.00

Corn, one ear of corn on or off cob, boiled and drained, 121g. 100/121=.83

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	4.00	0.40	150.00	5.00	0.02	0.04	0.90
1972	1.43	0.36	221.43	5.00	0.06	0.06	0.71
1999	5.40	0.45	240.00	5.40	0.05	0.07	1.44
% Change	35.00	12.50	60.00	8.00	125.00	80.00	60.00

Cranberries, raw 50g. 100/50=2

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	14.00	0.60	40.00	14.00	0.03	0.02	0.10
1972	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1999	8.00	0.20	46.00	14.00	0.04	0.02	0.20
% Change	-42.86	-66.67	15.00	0.00	33.33	0.00	100.00

Cucumbers, one, sliced and peeled, 110g. 100/110=.91

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Nicacin(mg)
1951	10.00	0.30	n/a	8.00	0.03	0.04	0.20
1972	16.00	0.40	n/a	12.00	0.04	0.04	0.20
1999	13.65	0.27	215.00	5.46	0.03	0.02	0.27
% Change	36.50	-10.00	n/a	-31.75	0.00	-50.00	35.00

Grapes, 10 grapes, raw, 50g.100/50=2

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Nicacin(mg)
1951	17.00	0.60	80.00	4.00	0.06	0.04	0.20
1972	9.80	0.26	65.36	1.96	0.03	0.02	0.13
1999	12.00	0.20	72.00	10.00	0.10	0.06	0.40
% Change	-29.41	-66.67	-10.00	150.00	66.67	50.00	100.00

Green peppers, one pepper, raw, seeded, 164g. 100/164= .61

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Nicacin(mg)
1951	11.00	0.40	630.00	120.00	0.04	0.07	0.40
1972	9.46	0.68	418.92	127.03	0.08	0.08	0.54
1999	9.15	0.49	631.96	89.00	0.07	0.03	0.67
% Change	-16.82	22.50	0.31	-25.83	75.00	-57.14	67.50

Lettuce, iceberg, chopped, 59g. 100/59=1.69

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Nicacin(mg)
1951	22.00	0.50	540.00	5.00	0.04	0.08	0.20
1972	20.04	0.51	330.40	6.39	0.06	0.06	0.29
1999	19.00	0.50	330.00	3.30	0.05	0.03	0.30
% Change	-13.64	0.00	-38.89	-34.00	25.00	-62.50	50.00

Onions, chopped, raw, 85g. 100/85=1.18

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Nicacin(mg)
1951	32.00	0.50	50.00	13.00	0.03	0.04	0.20
1972	27.27	0.55	36.36	10.00	0.04	0.04	0.18
1999	20.06	0.24	0.00	5.90	0.05	0.02	0.47
% Change	-37.31	-52.80	-100.0	-54.62	57.33	-41.00	136.00

Oranges, one orange, raw, 131g. 100/131=.76

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Nicacin(mg)
1951	33.00	0.40	1900.00	49.00	0.08	0.03	0.20
1972	30.00	0.28	144.44	36.67	0.07	0.03	0.28
1999	39.50	0.08	204.00	53.20	0.08	0.03	0.50
% Change	19.70	-80.00	-89.26	8.57	0.00	0.00	150.00

Peaches, one peach, raw, 87g. 100/87=1.15

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Nicacin(mg)
1951	8.00	0.60	1400.00	7.00	0.04	0.04	0.90
1972	7.89	0.44	1157.89	6.14	0.02	0.04	0.88
1999	4.60	0.10	53.00	7.00	0.01	0.05	1.00
% Change	-42.50	-83.33	-96.21	0.00	-75.00	25.00	11.11

Peas, canned, drained solids, 90g. 100/90=1.11

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	32.00	2.10	670.00	9.00	0.12	0.06	1.00
1972	23.57	2.07	635.71	8.57	0.11	0.06	1.07
1999	19.98	1.00	765.90	9.99	0.12	0.08	1.22
% Change	-37.56	-52.43	14.31	11.00	0.00	29.50	22.10

Pears, one pear, raw with skin, 169g. 100/169=.59

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	13.00	0.30	20.00	4.00	0.02	0.04	0.10
1972	7.14	0.27	16.48	3.85	0.02	0.04	0.11
1999	11.20	0.02	20.00	4.10	0.01	0.04	0.20
% Change	-13.85	-93.33	0.00	2.50	-50.00	0.00	100.00

Potatoes, one potato, peeled before boiling, 136g. 100/136=.74

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	11.00	0.70	20.00	17.00	0.11	0.04	1.20
1972	5.74	0.49	0.00	16.39	0.09	0.03	1.15
1999	7.97	0.30	0.00	7.25	0.09	0.02	1.74
% Change	-27.55	-57.14	-100	-57.35	-18.18	-50.00	45.00

Red pepper, one, seeded, 164g. 100/164=.61

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	11.00	0.40	2000.00	125.00	0.07	0.04	0.40
1972	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1999	9.15	0.49	5702.00	190.00	0.07	0.03	0.67
% Change	-16.82	22.50	185.10	52.00	0.00	-25.00	67.50

Spinach, chopped, raw, 59g. 100/59=1.7

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	81.00	3.00	9420.00	59.00	0.11	0.20	0.60
1972	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1999	99.71	2.70	6714.37	28.73	0.08	0.19	1.35
% Change	23.10	-9.87	-28.72	-51.31	-23.18	-7.05	125.33

Squash, winter squash, cubed and baked, 108g. 100/108=.93

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	34.00	0.60	4950.00	8.00	0.05	0.12	0.50
1972	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1999	14.00	0.40	3582.36	9.30	0.08	0.03	0.93
% Change	-58.82	-33.33	-27.63	16.25	60.00	-75.00	86.00

Strawberries, five medium strawberries raw, 60g. 100/60=1.67

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	28.00	0.80	60.00	60.00	0.03	0.07	0.30
1972	20.81	1.01	60.40	59.06	0.00	0.07	0.67
1999	13.30	0.30	26.70	57.00	0.02	0.07	0.30
% Change	-52.50	-62.50	-55.50	-5.00	-33.33	0.00	0.00

Tomato, one, raw, 6.6 cm diameter, 123g. 100/123=.81

	Calcium(mg)	Iron (mg)	Vitamin A (I.U.)	Vitamin C (mg)	Thiamine(mg)	Riboflavin (mg)	Niacin(mg)
1951	11.00	0.60	1100.00	19.00	0.06	0.04	0.50
1972	13.33	0.53	900.00	22.67	0.07	0.04	0.67
1999	4.88	0.49	623.00	18.70	0.06	0.05	0.73
% Change	-55.64	-18.33	-43.36	-1.58	0.00	25.00	46.00