

## **76 Ways Sugar Can Ruin Your Health**

*Contributed by Nancy Appleton, Ph.D, Author of the book " Lick The Sugar Habit"*

In addition to throwing off the body's homeostasis, excess sugar may result in a number of other significant consequences. The following is a listing of some of sugar's metabolic consequences from a variety of medical journals and other scientific publications.

1. Sugar can suppress your immune system and impair your defenses against infectious disease.1,2
2. Sugar upsets the mineral relationships in your body: causes chromium and copper deficiencies and interferes with absorption of calcium and magnesium. 3,4,5,6
3. Sugar can cause a rapid rise of adrenaline, hyperactivity, anxiety, difficulty concentrating, and crankiness in children.7,8
4. Sugar can produce a significant rise in total cholesterol, triglycerides and bad cholesterol and a decrease in good cholesterol.9,10,11,12
5. Sugar causes a loss of tissue elasticity and function.13
6. Sugar feeds cancer cells and has been connected with the development of cancer of the breast, ovaries, prostate, rectum, pancreas, biliary tract, lung, gallbladder and stomach.14,15,16,17,18,19,20
7. Sugar can increase fasting levels of glucose and can cause reactive hypoglycemia.21,22
8. Sugar can weaken eyesight.23
9. Sugar can cause many problems with the gastrointestinal tract including: an acidic digestive tract, indigestion, malabsorption in patients with functional bowel disease, increased risk of Crohn's disease, and ulcerative colitis.24,25,26,27,28
10. Sugar can cause premature aging.29
11. Sugar can lead to alcoholism.30
12. Sugar can cause your saliva to become acidic, tooth decay, and periodontal disease.31,32,33
13. Sugar contributes to obesity.34
14. Sugar can cause autoimmune diseases such as: arthritis, asthma, multiple sclerosis.35,36,37
15. Sugar greatly assists the uncontrolled growth of Candida Albicans (yeast infections)38
16. Sugar can cause gallstones.39

17. Sugar can cause appendicitis.40
18. Sugar can cause hemorrhoids.41
19. Sugar can cause varicose veins.42
20. Sugar can elevate glucose and insulin responses in oral contraceptive users.43
21. Sugar can contribute to osteoporosis.44
22. Sugar can cause a decrease in your insulin sensitivity thereby causing an abnormally high insulin levels and eventually diabetes.45,46,47
23. Sugar can lower your Vitamin E levels.48
24. Sugar can increase your systolic blood pressure.49
25. Sugar can cause drowsiness and decreased activity in children.50
26. High sugar intake increases advanced glycation end products (AGEs)(Sugar molecules attaching to and thereby damaging proteins in the body).51
27. Sugar can interfere with your absorption of protein.52
28. Sugar causes food allergies.53
29. Sugar can cause toxemia during pregnancy.54
30. Sugar can contribute to eczema in children.55
31. Sugar can cause atherosclerosis and cardiovascular disease.56,57
32. Sugar can impair the structure of your DNA.58
33. Sugar can change the structure of protein and cause a permanent alteration of the way the proteins act in your body.59,60
34. Sugar can make your skin age by changing the structure of collagen.61
35. Sugar can cause cataracts and nearsightedness.62,63
36. Sugar can cause emphysema.64
37. High sugar intake can impair the physiological homeostasis of many systems in your body.65
38. Sugar lowers the ability of enzymes to function.66
39. Sugar intake is higher in people with Parkinson's disease.67
40. Sugar can increase the size of your liver by making your liver cells divide and it can increase the amount of liver fat.68,69
41. Sugar can increase kidney size and produce pathological changes in the kidney such as the formation of kidney stones.70,71
42. Sugar can damage your pancreas.72

43. Sugar can increase your body's fluid retention.73
44. Sugar is enemy #1 of your bowel movement.74
45. Sugar can compromise the lining of your capillaries.75
46. Sugar can make your tendons more brittle.76
47. Sugar can cause headaches, including migraines.77
48. Sugar can reduce the learning capacity, adversely affect school children's grades and cause learning disorders.78,79
49. Sugar can cause an increase in delta, alpha, and theta brain waves which can alter your mind's ability to think clearly.80
50. Sugar can cause depression.81
51. Sugar can increase your risk of gout.82
52. Sugar can increase your risk of Alzheimer's disease.83
53. Sugar can cause hormonal imbalances such as: increasing estrogen in men, exacerbating PMS, and decreasing growth hormone.84,85,86,87
54. Sugar can lead to dizziness.88
55. Diets high in sugar will increase free radicals and oxidative stress.89
56. High sucrose diets of subjects with peripheral vascular disease significantly increases platelet adhesion.90
57. High sugar consumption of pregnant adolescents can lead to substantial decrease in gestation duration and is associated with a twofold increased risk for delivering a small-for-gestational-age (SGA) infant.91,92
58. Sugar is an addictive substance.93
59. Sugar can be intoxicating, similar to alcohol.94
60. Sugar given to premature babies can affect the amount of carbon dioxide they produce.95
61. Decrease in sugar intake can increase emotional stability.96
62. Your body changes sugar into 2 to 5 times more fat in the bloodstream than it does starch.97
63. The rapid absorption of sugar promotes excessive food intake in obese subjects.98
64. Sugar can worsen the symptoms of children with attention deficit hyperactivity disorder (ADHD).99
65. Sugar adversely affects urinary electrolyte composition.100
66. Sugar can slow down the ability of your adrenal glands to function.101

67. Sugar has the potential of inducing abnormal metabolic processes in a normal healthy individual and to promote chronic degenerative diseases.102
68. I.V.s (intravenous feedings) of sugar water can cut off oxygen to your brain.103
69. Sugar increases your risk of polio.104
70. High sugar intake can cause epileptic seizures.105
71. Sugar causes high blood pressure in obese people.106
72. In intensive care units: Limiting sugar saves lives.107
73. Sugar may induce cell death.108
74. In juvenile rehabilitation camps, when children were put on a low sugar diet, there was a 44 percent drop in antisocial behavior.109
75. Sugar dehydrates newborns.110
76. Sugar can cause gum disease.111

---

#### References

1. Sanchez, A., et al. Role of Sugars in Human Neutrophilic Phagocytosis, American Journal of Clinical Nutrition. Nov 1973;261:1180\_1184. Bernstein, J., al. Depression of Lymphocyte Transformation Following Oral Glucose Ingestion. American Journal of Clinical Nutrition.1997;30:613
2. Ringsdorf, W., Cheraskin, E. and Ramsay R. Sucrose, Neutrophilic Phagocytosis and Resistance to Disease, Dental Survey. 1976;52(12):46\_48.
3. Couzy, F., et al. "Nutritional Implications of the Interaction Minerals," Progressive Food and Nutrition Science 17;1933:65-87
4. Kozlovsky, A., et al. Effects of Diets High in Simple Sugars on Urinary Chromium Losses. Metabolism. June 1986;35:515\_518.
5. Fields, M., et al. Effect of Copper Deficiency on Metabolism and Mortality in Rats Fed Sucrose or Starch Diets, Journal of Clinical Nutrition. 1983;113:1335\_1345.
6. Lemann, J. Evidence that Glucose Ingestion Inhibits Net Renal Tubular Reabsorption of Calcium and Magnesium. Journal of Clinical Nutrition. 1976 ;70:236\_245.
7. Goldman, J., et al. Behavioral Effects of Sucrose on Preschool Children. Journal of Abnormal Child Psychology.1986;14(4):565\_577.
8. Jones, T. W., et al. Enhanced Adrenomedullary Response and Increased Susceptibility to

Neuroglycopenia: Mechanisms Underlying the Adverse Effect of Sugar Ingestion in Children. *Journal of Pediatrics*. Feb 1995;126:171-7.

9. Scanto, S. and Yudkin, J. The Effect of Dietary Sucrose on Blood Lipids, Serum Insulin, Platelet Adhesiveness and Body Weight in Human Volunteers, *Postgraduate Medicine Journal*. 1969;45:602\_607.

10. Albrink, M. and Ullrich I. H. Interaction of Dietary Sucrose and Fiber on Serum Lipids in Healthy Young Men Fed High Carbohydrate Diets. *American Journal of Clinical Nutrition*. 1986;43:419-428. Pamplona, R., et al. Mechanisms of Glycation in Atherogenesis. *Medical Hypotheses*. Mar 1993;40(3):174-81.

11. Reiser, S. Effects of Dietary Sugars on Metabolic Risk Factors Associated with Heart Disease. *Nutritional Health*. 1985;203\_216.

12. Lewis, G. F. and Steiner, G. Acute Effects of Insulin in the Control of Vldl Production in Humans. Implications for The insulin-resistant State. *Diabetes Care*. 1996 Apr;19(4):390-3 R. Pamplona, M. .J., et al. Mechanisms of Glycation in Atherogenesis. *Medical Hypotheses*. 1990;40:174-181.

13. Cerami, A., Vlassara, H., and Brownlee, M. "Glucose and Aging." *Scientific American*. May 1987:90. Lee, A. T. and Cerami, A. The Role of Glycation in Aging. *Annals of the New York Academy of Science*; 663:63-67.

14. Takahashi, E., Tohoku University School of Medicine, *Wholistic Health Digest*. October 1982:41:00

15. Quillin, Patrick, *Cancer's Sweet Tooth*, *Nutrition Science News*. Ap 2000 Rothkopf, M.. *Nutrition*. July/Aug 1990;6(4).

16. Michaud, D. Dietary Sugar, Glycemic Load, and Pancreatic Cancer Risk in a Prospective Study. *J Natl Cancer Inst*. Sep 4, 2002 ;94(17):1293-300.

17. Moerman, C. J., et al. Dietary Sugar Intake in the Etiology of Biliary Tract Cancer. *International Journal of Epidemiology*. Ap 1993.2(2):207-214.

18. *The Edell Health Letter*. Sept 1991;7:1.

19. De Stefani, E."Dietary Sugar and Lung Cancer: a Case control Study in Uruguay." *Nutrition and Cancer*. 1998;31(2):132\_7.

20. Cornee, J., et al. A Case-control Study of Gastric Cancer and Nutritional Factors in Marseille, France. *European Journal of Epidemiology* 11 (1995):55-65.

21. Kelsay, J., et al. Diets High in Glucose or Sucrose and Young Women. *American Journal of Clinical Nutrition*. 1974;27:926\_936. Thomas, B. J., et al. Relation of Habitual Diet to Fasting Plasma Insulin Concentration and the Insulin Response to Oral Glucose, *Human Nutrition Clinical Nutrition*. 1983; 36C(1):49\_51.
22. Dufty, William. *Sugar Blues*. (New York:Warner Books, 1975).
23. *Acta Ophthalmologica Scandinavica*. Mar 2002;48;25. Taub, H. Ed. Sugar Weakens Eyesight, *VM NEWSLETTER*;May 1986:06:00
24. Dufty.
25. Yudkin, J. *Sweet and Dangerous*.(New York:Bantam Books,1974) 129
26. Cornee, J., et al. A Case-control Study of Gastric Cancer and Nutritional Factors in Marseille, France, *European Journal of Epidemiology*. 1995;11
27. Persson P. G., Ahlbom, A., and Hellers, G. *Epidemiology*. 1992;3:47-52.
28. Jones, T. W., et al. Enhanced Adrenomedullary Response and Increased Susceptibility to Neuroglycopenia: Mechanisms Underlying the Adverse Effect of Sugar Ingestion in Children. *Journal of Pediatrics*. Feb 1995;126:171-7.
29. Lee, A. T.and Cerami A. The Role of Glycation in Aging. *Annals of the New York Academy of Science*.1992;663:63-70.
30. Abrahamson, E. and Peget, A. *Body, Mind and Sugar*. (New York: Avon, 1977.)
31. Glinsmann, W., Irausquin, H., and Youngmee, K. Evaluation of Health Aspects of Sugar Contained in Carbohydrate Sweeteners. F. D. A. Report of Sugars Task Force. 1986;39:00
32. Makinen K.K.,et al. A Descriptive Report of the Effects of a 16\_month Xylitol Chewing\_gum Programme Subsequent to a 40\_month Sucrose Gum Programme. *Caries Research*. 1998; 32(2)107\_12.
33. Glinsmann, W., Irausquin, H., and K. Youngmee. Evaluation of Health Aspects of Sugar Contained in Carbohydrate Sweeteners. F. D. A. Report of Sugars Task Force.1986;39:36\_38.
34. Appleton, N. New York: *Healthy Bones*. Avery Penguin Putnam:1989.
35. Keen, H., et al. Nutrient Intake, Adiposity, and Diabetes. *British Medical Journal*. 1989; 1:00 655\_658
36. Darlington, L., Ramsey, N. W. and Mansfield, J. R. Placebo Controlled, Blind Study of Dietary Manipulation Therapy in Rheumatoid Arthritis, *Lancet*. Feb 1986;8475(1):236\_238.
37. Powers, L. Sensitivity: You React to What You Eat. *Los Angeles Times*. (Feb. 12, 1985).

- Cheng, J., et al. Preliminary Clinical Study on the Correlation Between Allergic Rhinitis and Food Factors. *Lin Chuang Er Bi Yan Hou Ke Za Zhi* Aug 2002;16(8):393-396.
37. Erlander, S. The Cause and Cure of Multiple Sclerosis, The Disease to End Disease." Mar 3, 1979;1(3):59\_63.
38. Crook, W. J. *The Yeast Connection*. (TN:Professional Books, 1984).
39. Heaton, K. The Sweet Road to Gallstones. *British Medical Journal*. Apr 14, 1984; 288:00:00 1103\_1104. Misciagna, G., et al. *American Journal of Clinical Nutrition*. 1999;69:120-126.
40. Cleave, T. *The Saccharine Disease*. (New Canaan, CT: Keats Publishing, 1974).
41. Ibid.
42. Cleave, T. and Campbell, G. (Bristol, England:Diabetes, Coronary Thrombosis and the Saccharine Disease: John Wright and Sons, 1960).
43. Behall, K. Influence of Estrogen Content of Oral Contraceptives and Consumption of Sucrose on Blood Parameters. *Disease Abstracts International*. 1982;431437.
44. Tjäderhane, L. and Larmas, M. A High Sucrose Diet Decreases the Mechanical Strength of Bones in Growing Rats. *Journal of Nutrition*. 1998;128:1807\_1810.
45. Beck, Nielsen H., Pedersen O., and Schwartz S. Effects of Diet on the Cellular Insulin Binding and the Insulin Sensitivity in Young Healthy Subjects. *Diabetes*. 1978;15:289\_296 .
46. Sucrose Induces Diabetes in Cat. *Federal Protocol*. 1974;6(97). diabetes
47. Reiser, S., et al. Effects of Sugars on Indices on Glucose Tolerance in Humans. *American Journal of Clinical Nutrition*. 1986;43:151-159.
48. *Journal of Clinical Endocrinology and Metabolism*. Aug 2000
49. Hodges, R., and Rebello, T. Carbohydrates and Blood Pressure. *Annals of Internal Medicine*. 1983;98:838\_841.
50. Behar, D., et al. Sugar Challenge Testing with Children Considered Behaviorally Sugar Reactive. *Nutritional Behavior*. 1984;1:277\_288.
51. Furth, A. and Harding, J. Why Sugar Is Bad For You. *New Scientist*. Sep 23, 1989;44.
52. Simmons, J. Is The Sand of Time Sugar? *LONGEVITY*. June 1990:00:00 49\_53.
53. Appleton, N. New York: *LICK THE SUGAR HABIT*. Avery Penguin Putnam:1988.
- allergies
54. Cleave, T. *The Saccharine Disease*: (New Canaan Ct: Keats Publishing, Inc., 1974).131.
55. Ibid. 132

56. Pamplona, R., et al. Mechanisms of Glycation in Atherogenesis. *Medical Hypotheses* . 1990;00:00 174\_181.
57. Vaccaro O., Ruth, K. J. and Stamler J. Relationship of Postload Plasma Glucose to Mortality with 19 yr Follow up. *Diabetes Care*. Oct 15,1992;10:328\_334. Tominaga, M., et al, Impaired Glucose Tolerance Is a Risk Factor for Cardiovascular Disease, but Not Fasting Glucose. *Diabetes Care*. 1999;2(6):920-924.
58. Lee, A. T. and Cerami, A. Modifications of Proteins and Nucleic Acids by Reducing Sugars: Possible Role in Aging. *Handbook of the Biology of Aging*. (New York: Academic Press, 1990.).
59. Monnier, V. M. Nonenzymatic Glycosylation, the Maillard Reaction and the Aging Process. *Journal of Gerontology* 1990;45(4):105\_110.
60. Cerami, A., Vlassara, H., and Brownlee, M. Glucose and Aging. *Scientific American*. May 1987;00:00 90
61. Dyer, D. G., et al. Accumulation of Maillard Reaction Products in Skin Collagen in Diabetes and Aging. *Journal of Clinical Investigation*. 1993;93(6):421\_22.
62. Veromann, S. et al. "Dietary Sugar and Salt Represent Real Risk Factors for Cataract Development." *Ophthalmologica*. 2003 Jul-Aug;217(4):302-307.
63. Goulart, F. S. Are You Sugar Smart? *American Fitness*. March\_April 1991:00:00 34\_38. Milwaukee, WI
64. Monnier, V. M. Nonenzymatic Glycosylation, the Maillard Reaction and the Aging Process. *Journal of Gerontology*. 1990;45(4):105\_110.
65. Ceriello, A. Oxidative Stress and Glycemic Regulation. *Metabolism*. Feb 2000;49(2 Suppl 1):27-29.
66. Appleton, Nancy. New York; Lick the Sugar Habit. Avery Penguin Putnam, 1988 enzymes
67. Hellenbrand, W. Diet and Parkinson's Disease. A Possible Role for the Past Intake of Specific Nutrients. Results from a Self-administered Food-frequency Questionnaire in a Case-control Study. *Neurology*. Sep 1996;47(3):644-650.
68. Goulart, F. S. Are You Sugar Smart? *American Fitness*. March\_April 1991:00:00 34\_38.
69. Ibid.
70. Yudkin, J., Kang, S. and Bruckdorfer, K. Effects of High Dietary Sugar. *British Journal of Medicine*. Nov 22, 1980;1396.

71. Blacklock, N. J., Sucrose and Idiopathic Renal Stone. *Nutrition and Health*. 1987;5(1-2):9-11.
72. Curhan, G., et al. Beverage Use and Risk for Kidney Stones in Women. *Annals of Internal Medicine*. 1998;28:534-340.
73. Goulart, F. S. Are You Sugar Smart? *American Fitness*. March-April 1991:00:00 34\_38. Milwaukee, WI,:
74. Ibid. fluid retention
75. Ibid. bowel movement
76. Ibid. compromise the lining of the capillaries
77. Nash, J. *Health Contenders*. *Essence*. Jan 1992; 23:00 79\_81.
78. Grand, E. Food Allergies and Migraine. *Lancet*. 1979;1:955\_959.
79. Schauss, A. *Diet, Crime and Delinquency*. (Berkeley Ca; Parker House, 1981.)
80. Molteni, R, et al. A High-fat, Refined Sugar Diet Reduces Hippocampal Brain-derived Neurotrophic Factor, Neuronal Plasticity, and Learning. *NeuroScience*. 2002;112(4):803-814.
81. Christensen, L. The Role of Caffeine and Sugar in Depression. *Nutrition Report*. Mar 1991;9(3):17-24.
82. Ibid,44
83. Yudkin, J. *Sweet and Dangerous*.(New York:Bantam Books,1974) 129
84. Frey, J. Is There Sugar in the Alzheimer's Disease? *Annales De Biologie Clinique*. 2001; 59 (3):253-257.
85. Yudkin, J. Metabolic Changes Induced by Sugar in Relation to Coronary Heart Disease and Diabetes. *Nutrition and Health*. 1987;5(1-2):5-8.
86. Yudkin, J and Eisa, O. Dietary Sucrose and Oestradiol Concentration in Young Men. *Annals of Nutrition and Metabolism*. 1988;32(2):53-55.
87. The Edell Health Letter. Sept 1991;7:1.
88. Gardner, L. and Reiser, S. Effects of Dietary Carbohydrate on Fasting Levels of Human Growth Hormone and Cortisol. *Proceedings of the Society for Experimental Biology and Medicine*. 1982;169:36\_40.
89. Journal of Advanced Medicine. 1994;7(1):51-58.
90. Ceriello, A. Oxidative Stress and Glycemic Regulation. *Metabolism*. Feb 2000;49(2 Suppl 1):27-29.
91. Postgraduate Medicine.Sept 1969;45:602-07.

91. Lenders, C. M. Gestational Age and Infant Size at Birth Are Associated with Dietary Intake among Pregnant Adolescents. *Journal of Nutrition*. Jun 1997;1113- 1117
92. Ibid.
93. Sugar, White Flour Withdrawal Produces Chemical Response. *The Addiction Letter*. Jul 1992:04:00 Colantuoni, C., et al. Evidence That Intermittent, Excessive Sugar Intake Causes Endogenous Opioid Dependence. *Obes Res*. Jun 2002 ;10(6):478-488. Annual Meeting of the American Psychological Society, Toronto, June 17, 2001  
[www.mercola.com/2001/jun/30/sugar.htm](http://www.mercola.com/2001/jun/30/sugar.htm)
94. Ibid.
95. Sunehag, A. L., et al. Gluconeogenesis in Very Low Birth Weight Infants Receiving Total Parenteral Nutrition Diabetes. 1999 ;48 7991\_800.
96. Christensen L., et al. Impact of A Dietary Change on Emotional Distress. *Journal of Abnormal Psychology*.1985;94(4):565\_79.
97. *Nutrition Health Review*. Fall 85 changes sugar into fat faster than fat
98. Ludwig, D. S., et al. High Glycemic Index Foods, Overeating and Obesity. *Pediatrics*. March 1999;103(3):26-32.
99. *Pediatrics Research*. 1995;38(4):539-542. Berdonces, J. L. Attention Deficit and Infantile Hyperactivity. *Rev Enferm*. Jan 2001;4(1)11-4
100. Blacklock, N. J. Sucrose and Idiopathic Renal Stone. *Nutrition Health*. 1987;5(1 & 2):9-
101. Lechin, F., et al. Effects of an Oral Glucose Load on Plasma Neurotransmitters in Humans. *Neurophychobiology*. 1992;26(1-2):4-11.
102. Fields, M. *Journal of the American College of Nutrition*. Aug 1998;17(4):317\_321.
103. Arieff, A. I. Veterans Administration Medical Center in San Francisco. *San Jose Mercury*; June 12/86. IVs of sugar water can cut off oxygen to the brain.
104. Sandler, Benjamin P. *Diet Prevents Polio*. Milwaukee, WI,:The Lee Foundation for for Nutritional Research, 1951
105. Murphy, Patricia. *The Role of Sugar in Epileptic Seizures*. Townsend Letter for Doctors and Patients. May, 2001 Murphy Is Editor of Epilepsy Wellness Newsletter, 1462 West 5th Ave., Eugene, Oregon 97402
106. Stern, N. & Tuck, M. *Pathogenesis of Hypertension in Diabetes Mellitus*. *Diabetes Mellitus, a Fundamental and Clinical Test*. 2nd Edition, (Philadelphia; A:Lippincott Williams & Wilkins,

2000)943-957.

107. Christansen, D. Critical Care: Sugar Limit Saves Lives. Science News. June 30, 2001; 159:404.

108. Donnini, D. et al. Glucose May Induce Cell Death through a Free Radical-mediated Mechanism. Biochem Biophys Res Commun. Feb 15, 1996;219(2):412-417.

109. Schoenthaler, S. The Los Angeles Probation Department Diet-Behavior Program: An Empirical Analysis of Six Institutional Settings. Int J Biosocial Res 5(2):88-89.

110. Gluconeogenesis in Very Low Birth Weight Infants Receiving Total Parenteral Nutrition. Diabetes. 1999 Apr;48(4):791-800.

111. Glinsmann, W., et al. Evaluation of Health Aspects of Sugar Contained in Carbohydrate Sweeteners." FDA Report of Sugars Task Force -1986 39 123 Yudkin, J. and Eisa, O. Dietary Sucrose and Oestradiol Concentration in Young Men. Annals of Nutrition and Metabolism. 1988;32(2):53-5.