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PROVIDING SCIENTIFIC INFORMATION RELATED TO NUTRITIONAL SACCHARIDES AND OTHER DIETARY INGREDIENTS.

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Top Ten Reasons to Not Get Sick

Stephen Boyd, PhD, MD; Jane Ramberg, MS; Eileen Vennum, RAC; Bill McAnalley, PhD

Nobody wants to get sick. That's obvious. But you may not be aware of all the important reasons to safeguard your health. So, we've put together our personal top ten reasons not to get sick. Some should be obvious and others may surprise you. Overall, we hope these points will convince you that taking good care of yourself really does matter, because getting sick is risky business!



1. GETTING SICK MAKES US LOOK BAD.

This is obvious!



2. GETTING SICK MAKES US FEEL BAD.

People who eat right, exercise, and get adequate rest feel better and enjoy a higher quality of life.¹



3. GETTING SICK IS EXPENSIVE.

How expensive? Healthcare spending now accounts for 14% of the gross domestic product in the U.S.² Just for those diseases that are strongly linked to diet, the cost for medical

treatment and care exceeds \$200 billion per year.³ Obesity, which is now epidemic in the U.S. and much of the developed world, accounts for a staggering 5.5-7% of all health costs in the U.S. (over \$86 billion).^{3,4} Yearly costs for cancer treatment run about \$104 billion and for cardiovascular disease more than \$80 billion.³ A recent study reported that prostate cancer was responsible for \$180 million in medical costs and \$180 million in lost productivity from premature death in California in 1998.⁵

Who's paying the bills? Increasingly, we are. Because of skyrocketing healthcare costs, many employers feel obliged

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to pass more of the burden on to their employees. Nearly half of large employers will raise payroll deductions for health benefits in 2003; about 44% plan to boost deductibles, co-insurance, or co-payments. Many small and medium-sized companies have eliminated health plans entirely.² Growing numbers of people must now pay entirely out of pocket. The Centers for Disease Control (CDC) web site published statistics that show that in 2000, 40.5 million Americans age 65 and under had no health insurance at all.⁶



4. GETTING SICK MEANS LOST TIME AT WORK AND SCHOOL.

Let's consider respiratory infections, which are the most common illnesses worldwide.⁷ The economic burden due to lost productivity from the common cold is roughly \$25 billion annually.^{8,9} Colds can also exacerbate asthma, a growing health problem.¹⁰ Children and adults with asthma miss more days of work and school than healthy individuals,^{10,11,12} and this disease often compromises their ability to perform optimally at school or work.^{11,12}



5. GETTING SICK LOWERS OUR DEFENSES, PUTTING US AT RISK FOR DEVELOPING MORE SERIOUS ILLNESSES.

Our overall health and nutritional status clearly affects our vulnerability to infections.^{13,14}

We've learned that the common cold is the most prevalent illness worldwide. These upper respiratory tract viral infections also leave us vulnerable to other common respiratory complications, including asthma, ear infections, sinusitis, and tonsillitis.^{8,15,16,17} Worse, viral infections can contribute to the development of certain human tumors. In fact, viruses are considered to be the second most important risk factor for cancer development in humans, exceeded only by tobacco use.¹⁸ Viruses most commonly suspected in cancer development include papillomavirus, hepatitis B, Epstein-Barr, human T cell leukemia-lymphoma and Kaposi's sarcoma-associated herpesvirus.^{18,19} Taken together, these viruses are responsible for nearly 20% of cancers worldwide.^{18,19,20}



6. GETTING SICK INCREASES OUR CHANCES OF REQUIRING MEDICATION, AND THERE ARE SIGNIFICANT RISKS WHEN WE TAKE CORRECTLY PRESCRIBED MEDICINES.

Despite extensive efforts to establish the safety of prescription drugs, most of us realize that they must be used with due caution. A recent analysis of 39 prospective studies in hospitals revealed an extremely high incidence of

adverse drug reactions. Even when drugs were taken in the hospital under doctors' directions, there were more than two million adverse reactions, many of which contributed to patient deaths. The authors of this study concluded that adverse drug reactions ranked consistently between the fourth and sixth leading cause of death in the U.S.²¹ Newer drugs are particularly risky, since they have yet to be tested on a large population. Ten percent of new drugs released over the past 25 years subsequently acquired "black box" warnings (indicating adverse drug reactions) or were withdrawn from the market because of safety concerns. Half of these withdrawals occurred within 2 years of launch. The authors acknowledge that "innovative new therapies are important, but when safe and effective therapies already exist, any new drug should be considered a black box."²²

FenPhen and Redux, both popular diet drugs of the 1980's and 1990's, illustrate this important issue. In 1989, a randomized, double-blind, placebo-controlled "gold standard" study of more than 800 patients concluded that FenPhen was safe.²³ Another article published 7 years later in the *New England Journal of Medicine* agreed.²⁴ When the Mayo clinic announced a year later that use of FenPhen and Redux was associated with a specific type of heart disease, these drugs were withdrawn from the market. Billions of dollars have since been awarded to individuals who suffered heart damage from using these "safe" drugs. However, the market-driven enthusiasm for a solution to a common health problem prolonged the use of these drugs well beyond recognition of their potential dangers.

Less obvious are the potential dangers of over-the-counter (OTC) drugs. Despite the fact that many OTC drugs have been on the market for a long time, we continue to acquire new information about their adverse actions and possible long-term effects. Any drug, regardless of its prescription status, may have unwanted and potentially dangerous actions in some people. Thus, one should use even OTC drugs with caution.²⁵

For example, OTC anti-inflammatory drugs can increase the frequency of headaches and raise blood pressure. Pain specialists have learned that daily use of even mild analgesics such as Tylenol or Advil can actually aggravate the headaches that they were designed to treat.²⁶ An 8-year study of a large group of women (44-69 years of age) indicated that those who took aspirin or Tylenol 1 day per month or other non-steroidal anti-inflammatory drugs (NSAIDs) 5 or more days per month showed a significantly higher risk of developing high blood pressure.²⁷ Another 2-year study showed that younger women (31-50 years of age) taking as little as 1 day/month of either Tylenol or NSAIDs had a significantly increased risk of developing high blood pressure. Aspirin use was not associated with this risk. The authors concluded, "A substantial proportion of hypertension in the United States, and the associated morbidity and mortality, may be due to the use of these medications."²⁸ Finally, some investigators found that individuals who used Advil for more than 8 weeks during the course of a year were more likely to have experienced dizziness, skin rashes, itchy skin and wheeziness in the week prior to the time they were interviewed.²⁵



7. GETTING SICK INCREASES OUR CHANCES OF BEING HOSPITALIZED, WHICH INTRODUCES THE POSSIBILITY OF HOSPITAL-ACQUIRED (NOSOCOMIAL) INFECTIONS.

Hospitals play an important role in our society, and many thousands of lives are saved within their walls every year. For example, survival from trauma has increased dramatically because of improved hospital procedures. Nonetheless, hospital environments and procedures are not perfect.

Contrary to the popular belief that all of our hospitals are squeaky-clean, germ-free environments, many patients actually acquire infections when they are hospitalized. Six percent of all patients hospitalized will acquire an infection during the course of their stay. Infection rates as high as 20% have been recorded in pediatric intensive care units.²⁹ As many as 90,000 – 103,000 deaths in the year 2000 were linked to hospital infections. Hospital-acquired infections kill more people each year than car accidents, fires and drowning combined. An exhaustive exposé of hospital safety published last summer in the *Chicago Tribune* found that 75% of these deadly infections (about 75,000) were easily preventable; they resulted from unsanitary facilities or unwashed instruments and hands.²⁹ A dozen recent health-care studies showed that nearly half of the doctors and nurses in any given hospital fail to wash their hands between patients. The CDC and the U.S. Department of Health and Human Services propose that simple hand washing could prevent as many as 20,000 deaths each year.²⁹



8. GETTING SICK INCREASES OUR CHANCES OF BEING HOSPITALIZED, AND MANY HOSPITALS ARE CHALLENGED WITH SEVERE NURSING SHORTAGES.

Adequate nursing staff is important for patient care and even for patient survival. The serious shortages of adequately trained nurses—a major problem for many hospitals—can put patients at risk.^{30,31,32} A recent study reported fewer urinary tract infections, upper GI bleeding, pneumonia, shock, and cardiac arrest in medical patients who received sufficient nursing care compared to those who did not. In addition, fewer patients died from medical complications when they received adequate nursing care.³⁰



9. GETTING SICK INCREASES OUR CHANCES OF BEING HOSPITALIZED, AND HOSPITALS ARE SOMETIMES STAFFED WITH FATIGUED NURSES AND RESIDENT PHYSICIANS.

Fatigue impairs human per-

formance. Sleep deprivation is considered by many to be the “Achilles heel” of the medical profession.³³ Medical residents typically work 80-120-hour weeks and are commonly on-call for 24-36 hours at a time. It’s not uncommon for nurses to work two or more shifts back-to-back.³⁴ Such extended work hours would never be permitted within the transportation (e.g., airline pilots) and nuclear power industries.³⁴ An article in the *New England Journal of Medicine* recently proposed a comprehensive system of reform, stating that residents’ work hours are “incompatible with a safe, high-quality healthcare system.”³⁴



10. GETTING SICK INCREASES OUR CHANCES OF BEING SUBJECTED TO MEDICAL ERRORS.

This issue is beyond the problem discussed earlier regarding adverse reactions to correctly prescribed drugs. Fatigue and staffing shortages certainly contribute to treatment errors and problems resulting from incorrectly prescribed or filled drugs. Between 44,000-98,000 Americans die each year because of such mistakes. Death due to medical errors now ranks as the eighth leading cause of death in the U.S., exceeding causes such as motor vehicle accidents, breast cancer or AIDS.³⁵

Medication errors are only part of the problem. Approximately 2% of hospital patients experience a preventable adverse drug event. In 1993, more than 7,000 people in the U.S. died from medication errors, a 2.5-fold increase since 1983. Outpatient medication errors rose 8.5-fold over the same period of time.³⁵

CONCLUSIONS

We’ve given you our top ten reasons not to get sick. You may have your own reasons to add. Of course, we all want to feel better and look better, but we should realize that there are very real risks associated with getting sick. Dangers associated with the use of prescription and OTC drugs are daunting, and hospitalization for any illness poses significant risks. Certainly, it behooves us to stay well.

Unfortunately, our affluent society undermines good health. Temptations to consume unhealthy fat- and sugar-laden foods surround us. The automobile relieves us of the need to walk. Television, computers and video games are our sedentary pleasures. Many of us sit down to work. It is not hard to see where this is leading—straight to a very unhealthy lifestyle!

Good choices require willpower. To remain healthy, we must set aside time for adequate exercise and rest. We must consciously choose to eat a healthy diet including an abundance of fresh fruits and vegetables. Dietary supplementation can help ensure that we get adequate nutrition. In fact, the authors of a review of vitamins and chronic disease prevention published last summer in the *Journal of the American Medical Association* recommended that all adults take daily vitamin supplements.³⁶

Sooner or later, we all do get sick and shouldn’t hesitate to go to the hospital when we need to. Further, we should remember that our health is not completely within our control. Each of us has a unique genetic constitution, a person-

al history of exposure to environmental insults and past dietary practices that cannot be changed. Nevertheless, if we develop and adhere to a healthy lifestyle beginning this very day, we can make a difference tomorrow. There is no question that good nutrition and a healthy lifestyle will

decrease our chances of getting sick and thus our need for interventional drugs or hospital care. If we resolve to care for ourselves, the rewards are great. If we don't, the risks are many. The choice is ours! 🌍🌱

REFERENCE LIST

1. Drewnowski A, Evans WJ. Nutrition, physical activity, and quality of life in older adults: summary. *J Gerontol A Biol Sci Med Sci*. 2001;56 Spec No 2(2):89-94.
2. Johanna Bennett. Health care costs will keep rising for rank and file. *Dow Jones Business News*, January 15, 2003.
3. USDA Agricultural Research Service. Human Nutrition. Program Summary: Program Rationale. USDA: 2001.
4. Thompson D, Wolf AM. The medical-care cost burden of obesity. *Obes Rev*. 2001;2(3):189-197.
5. Max W, Rice DP, Sung HY, et al. The economic burden of prostate cancer, California, 1998. *Cancer*. 2002;94(11):2906-2913.
6. Health Insurance Coverage. CDC National Center for Health Statistics: www.cdc.gov/nchs/fastats/hinsure.htm, 2000.
7. Monto AS, Fendrick AM, Sarnes MW. Respiratory illness caused by picornavirus infection: a review of clinical outcomes. *Clin Ther*. 2001;23(10):1615-1627.
8. Heikkinen T, Jarvinen A. The common cold. *Lancet*. 2003;361(9351):51-59.
9. Bramley TJ, Lerner D, Sarnes M. Productivity losses related to the common cold. *J Occup Environ Med*. 2002;44(9):822-829.
10. Tartasky D. Asthma in the inner city: a growing public health problem. *Holist Nurs Pract*. 1999;14(1):37-46.
11. Erickson SR, Kirking DM. A cross-sectional analysis of work-related outcomes in adults with asthma. *Ann Allergy Asthma Immunol*. 2002;88(3):292-300.
12. Diette GB, Markson L, Skinner EA, et al. Nocturnal asthma in children affects school attendance, school performance, and parents' work attendance. *Arch Pediatr Adolesc Med*. 2000;154(9):923-928.
13. Madigan MT, Martinko JM, and Parker J. Host-Parasite Relationships. In: *Biology of Microorganisms*. Prentice Hall, Upper Saddle River, 2000: 773-800.
14. Gauntt CJ, McAnalley BH, McDaniel HR. Glyconutritional: implications for recovery from viral infections. *GlycoScience & Nutrition (Official Publication of GlycoScience.com: The Nutrition Science Site)*. 2001;2(2):1-6.
15. West JV. Acute upper airway infections. *Br Med Bull*. 2002;61:215-230.
16. Jain N, Lodha R, Kabra SK. Upper respiratory tract infections. *Indian J Pediatr*. 2001;68(12):1135-1138.
17. Gern JE. Rhinovirus respiratory infections and asthma. *Am J Med*. 2002;112 Suppl 6A:19S-27S.
18. Zur HH. Viruses in human cancers. *Science*. 1991;254(5035):1167-1173.
19. Eckhart W. Viruses and human cancer. *Sci Prog*. 1998;81(Pt 4):315-328.
20. Blattner WA. Human retroviruses: their role in cancer. *Proc Assoc Am Physicians*. 1999;111(6):563-572.
21. Lazarou J, Pomeranz BH, Corey PN. Incidence of adverse drug reactions in hospitalized patients: A meta-analysis of prospective studies. *JAMA*. 1998;279(15):1200-1205.
22. Lasser KE, Allen PD, Woolhandler SJ, et al. Timing of new black box warnings and withdrawals for prescription medications. *JAMA*. 2002;287(17):2215-2220.
23. Guy-Grand B, Apfelbaum M, Crepaldi G, et al. International trial of long-term dexfenfluramine in obesity. *Lancet*. 1989;2(8672):1142-1145.
24. Manson JE, Faich GA. Pharmacotherapy for obesity—do the benefits outweigh the risks? *NEJM*. 1996;335(9):659-660.
25. Sinclair HK, Bond CM, Hannaford PC. Long-term follow-up studies of users of nonprescription medicines purchased from community pharmacies: some methodological issues. *Drug Saf*. 2001;24(12):929-938.
26. Olesen J. Analgesic headache. *BMJ*. 1995;310(6978):479-480.
27. Dedier J, Stampfer MJ, Hankinson SE, et al. Non-narcotic analgesic use and the risk of hypertension in U.S. women. *Hypertension*. 2002;40(5):604-608.
28. Curhan GC, Willett WC, Rosner B, et al. Frequency of analgesic use and risk of hypertension in younger women. *Arch Intern Med*. 2002;162(19):2204-2208.
29. Berens MJ. Unhealthy Hospitals: Infection epidemic carves deadly path. *Chicago Tribune*. 2002.
30. Needleman J, Buerhaus P, Mattke S, et al. Nurse staffing levels and the quality of care in hospitals. *NEJM*. 2002;346(22):1715-1722.
31. Buerhaus PI, Needleman J, Mattke S, et al. Strengthening hospital nursing. *Health Aff (Millwood)*. 2002;21(5):123-132.
32. Aiken LH, Clarke SP, Sloane DM, et al. Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *JAMA*. 2002;288(16):1987-1993.
33. Leach DC. Residents' work hours: the Achilles heel of the profession? *Acad Med*. 2000;75(12):1156-1157.
34. Gaba DM, Howard SK. Fatigue among clinicians and the safety of patients. *N Engl J Med*. 2002;347(16):1249-1255.

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35. Kohn LT, Corrigan JM, Donaldson MS, ed. *To Err is Human: Building a Safer Health System*. Washington, D.C.: National Academy Press, 2001.
36. Fletcher RH, Fairfield KM. Vitamins for chronic disease prevention in adults: clinical applications. *JAMA*. 2002;287(23):3127-3129.

