

- versity hospital. *Am J Infect Control* 1992;20:75-79.
11. Wolfrum J. A follow-up evaluation to a needle-free IV system. *Nursing Management* 1994;25:33-35.
 12. Younger B, Hunt E, Robinson C, McLemore C. Impact of a shielded safety syringe on needlestick injuries among healthcare workers. *Infect Control Hosp Epidemiol* 1993;13:349-353.
 13. Tierney M, Spenser M, Carrol J, et al. Efficacy of needlestick reduction devices at a large teaching hospital. Fourth Annual Meeting of the Society for Healthcare Epidemiology of America; March 1994; New Orleans LA. Abstract M6.
 14. Palandri M, Sasse S, Rupp M. Impact of a needleless intravenous system on needlestick injuries in a university hospital. Fifth Annual Meeting of the Society for Healthcare Epidemiology of America; April 1995; San Diego, CA. Presentation 48.
 15. Lawrence L, Felknor S, Johnson P, Frankowski R, Davidson A, Delclos G. The effectiveness of a needleless intravenous system in prevention of percutaneous injury in two hospitals. Fifth Annual Meeting of the Society for Healthcare Epidemiology of America; April 1995; San Diego, CA. Abstract 49.
 16. Beason R, Bourguignon J, Fowler D, Gardner C. Evaluation of a needle-free intravenous access system. *Journal of Intravenous Nursing* 1992;15:11-16.
 17. Younger B. Impact of a needleless IV system on needlestick injuries and primary bloodstream infection rates. Fourth Annual Meeting of the Society for Healthcare Epidemiology of America; March 1994; New Orleans, LA. Abstract M7.
 18. Haiduvan DJ, DeMaio TM, Stevens DA. A five-year study of needlestick injuries: significant reduction associated with communication, education, and convenient placement of sharps containers. *Infect Control Hosp Epidemiol* 1992;13:265-271.
 19. Armstrong S. The cost of needlestick injuries: the impact of safer medical devices. *Nursing Economics* 1991;9:426.
 20. Berry A. Are some types of needles more likely to transmit HIV to healthcare workers? *Am J Infect Control* 1993;21:216-218.
 21. Manian FA, Meyer L, Jenne J. Puncture injuries due to needles removed from intravenous lines: should the source patient routinely be tested for bloodborne pathogens? *Infect Control Hosp Epidemiol* 1993;14:325-330.
 22. Laufer FN, Chiarello LA. Application of cost-effectiveness methodology to the consideration of needlestick-prevention technology. *Am J Infect Control* 1994;22:75-82.
 23. Short L, Chamberland M, Srivastava P, et al. Impact of safety devices to reduce percutaneous injuries during phlebotomy. Fifth Annual Meeting of the Society for Healthcare Epidemiology of America; April 1995; San Diego, CA. Abstract 50.
 24. Chamberland ME, Ciesielski CA, Howard RJ, Fry DE, Bell DM. Occupational risk of infection with human immunodeficiency virus. *Surg Clin North Am* 1995;75:1057-1070.

Influenza Vaccine: No Side Effects

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Between 25 and 50 million people each year become ill with influenza, resulting in millions of work-loss days, hundreds of thousands of hospitalizations, and billions of dollars in healthcare costs. Concern about side effects has been one of the barriers to influenza vaccination. Dr. Kristin Nichol and colleagues recently studied the side effects following influenza vaccination among healthy working adults, randomized to receive influenza or placebo injections. Of the 849 subjects enrolled in the study, 425 received a placebo, and 424

received influenza vaccine. When assessed for the 7 days following the study injection, vaccine and placebo recipients reported the same rates of fever, myalgia, fatigue, malaise, or headaches. Overall, 35.2% of placebo and 34.1% of vaccine recipients reported at least one of these systemic symptoms. Vaccine recipients reported a higher rate of arm soreness at the injection site than did placebo recipients. Local reactions were mild in both groups and infrequently resulted in decreased use of the arm. After logistic regression, female gender, age younger than 40 years, and coincidental upper respiratory tract illness were associated

independently with higher rates of systemic symptoms.

In the multivariate model, vaccine again was not associated with systemic symptoms. The authors concluded that influenza vaccination does not cause systemic adverse side effects in healthy adults. Symptoms reported by patients who receive influenza vaccination most likely are the result of coincidental illness or heightened somatic awareness following vaccination.

FROM: Nichol KL, Margolis KL, Lind A, et al. Side effects associated with influenza vaccination in healthy working adults. *Arch Intern Med* 1996;156:1546-1550.