

Think About
Protecting Your Teen.

Think
Meningococcal Vaccination.



What is meningococcal disease, and why is it so dangerous?

Many people think that meningococcal (**ME-NING-GO-KOK-AL**) disease is only a problem on college campuses. But what you need to know is that adolescents in high school are also at increased danger from this serious and potentially life-threatening infection.

Meningococcal disease is a serious bacterial infection. It can cause meningitis—severe swelling of the brain and spinal cord. It can also lead to sepsis—a dangerous and potentially life-threatening blood infection. The bacteria that cause meningococcal disease are spread through air droplets (eg, coughing, sneezing) and by direct contact with an infected person (eg, kissing, sharing a drinking glass).¹

Meningococcal disease is very dangerous because it often begins with symptoms that can be mistaken for other common viral illnesses such as the flu.

But unlike more common infections, meningococcal disease can get worse very rapidly, and it can kill an otherwise healthy young person in 48 hours or less.¹⁻⁴

In fact, **up to 1 in 5** people who get meningococcal disease will die.^{2,3,5-7}

Of those who survive, **up to 1 in 5** will suffer from permanent disabilities such as limb amputation, severe scarring, brain damage, and hearing loss.^{2,3,5,7}



Why is concern about meningococcal disease growing?

Although meningococcal disease is rare, adolescents and young adults are at increased risk.

Data from the Centers for Disease Control and Prevention (CDC) indicate that meningococcal disease rates begin to rise during adolescence and peak between the ages of 15 to 24 years.⁸ In addition, death rates from meningococcal disease are **up to 5 times higher** among 15- to 24-year-olds compared with younger populations.^{5,9}

It is thought that certain social behaviors involving close personal contact—such as sharing drinking glasses or water bottles, kissing, smoking (active or passive), or being in crowded situations—may put young people at greater risk for getting meningococcal disease.^{1,6,7,10}



A Survivor's Story

Susan T, a 13-year-old student, woke up with a headache, pains in her arms and legs, and a temperature of 103°F. That night she began to vomit and her parents took her to the hospital.

Susan represents a hypothetical patient, but her story is based on cases that have been reported.^{2,4}

In the emergency room, she appeared to have a seizure and went into shock. A few hours later, a rash of small purplish dots appeared on her arms and legs. A test of her spinal fluid showed that she had meningococcal disease. Appropriate antibiotics were started. Susan developed septicemia (a very serious blood infection), which caused gangrene in her arms and legs. To save her life, doctors had to amputate both of her legs below the knee. Because Susan's meningococcal disease was caused by *N meningitidis* serogroup C, her case was potentially vaccine preventable.

Why should you ask your doctor about meningococcal vaccination?

It's effective

Meningococcal vaccination can greatly reduce the risk of getting this very serious and potentially deadly disease. In fact, **up to 83%** of the cases in adolescents and young adults are caused by strains of bacteria that are potentially vaccine-preventable.^{5,6,11} The vaccine will help protect against the most common forms of the bacteria (*N meningitidis* strains A, C, Y, and W-135) that cause meningococcal disease. In fact, meningococcal vaccination has been used since the 1970s.¹² Be aware, however, that meningococcal vaccination will only protect against infection caused by strains A, C, Y, and W-135, and that no vaccine is guaranteed to protect 100% of individuals.

Recently, a “conjugate” meningococcal vaccine, which is a new form of the existing vaccine, was licensed for use in the United States by the Food and Drug Administration (FDA). This finally makes it possible to protect young people before the time of increased risk for meningococcal disease.^{1,13}

It's safe

You should also know that the meningococcal vaccine has been demonstrated to be safe. However, as with all vaccines, some reactions (eg, soreness or redness at the injection site for 1 or 2 days) can happen. Some people may also have other reactions like headache, fever, or chills. Vaccination should be avoided by persons with known hypersensitivity (severe allergic reaction) to any component of the vaccine. The meningococcal vaccine can be administered along with other immunizations, including the adolescent tetanus and diphtheria (Td) booster. As with most vaccines, you should delay immunization if you have an illness (such as a fever).

Is meningococcal vaccination recommended?

Guidelines asking physicians and other health-care professionals to inform college students and their parents about the dangers of meningococcal disease and to provide vaccination for those who wish to reduce their risk have been issued by:

- The Advisory Committee on Immunization Practices (ACIP)⁷
- The American Academy of Pediatrics (AAP)¹⁴
- The American College Health Association (ACHA)¹⁵

In addition, **more than 30 states** have enacted legislation mandating distribution of information about meningococcal disease and the availability of a safe and effective vaccine to college students and their parents. Of these states, several also require distribution of information about meningococcal disease and the availability of a vaccine to high school students, children attending camp, and their parents.^{*16}

To learn more about meningococcal legislation in your state, log on to the National Meningitis Association Web site at www.nmaus.org

*Legislation enacted as of July 2004.

What other vaccinations are recommended for adolescents and young adults?

The ACIP and the AAP also recommend that adolescents and young adults be up-to-date with all of their vaccinations.^{17,18}

Vaccine	Recommendation	Dosage
Hepatitis A	Those at increased risk of hepatitis A or its complications*	2 doses (6 to 18 months apart)
Hepatitis B	Those not vaccinated previously for hepatitis B	3 doses [†]
Influenza (Flu)	Those at increased risk of complications or who have contact with high-risk individuals, or anyone who wants to reduce the likelihood of getting influenza	Once-a-year (Sept–Mar)
Measles, mumps, rubella (MMR)	Those not vaccinated previously with 2 doses of measles vaccine (at 12 months of age or older)	1 dose
Pneumococcal (PPV)[‡]	Those at increased risk for pneumococcal disease or its complications	1 dose
Tetanus and diphtheria (Td)	Those not vaccinated within the previous 5 years	1 booster dose every 10 years
Varicella (Chicken-pox)	Those not vaccinated previously and with no reliable history of chickenpox	2 doses [§] (4 to 8 weeks apart)

*Talk to your health-care professional about medical conditions, lifestyles, travel, and other factors that may increase the risk of hepatitis A.

[†]2nd dose, 1 to 2 months after 1st dose; 3rd dose, 4 to 6 months after 1st dose.

[‡]PPV = Pneumococcal polysaccharide vaccine.

[§]Adolescents less than 13 years of age should receive 1 dose.

References:

- Granoff DM, Feavers IM, Borrow R. Meningococcal vaccines. In: Plotkin SA, ed. *Vaccines*. 4th ed. Philadelphia, Pa: WB Saunders Co.; 2004:959-987.
- Erickson L, De Wals P. Complications and sequelae of meningococcal disease in Quebec, Canada, 1990–1994. *Clin Infect Dis*. 1998;26:1159-1164.
- Erickson LJ, De Wals P, McMahon J, Heim S. Complications of meningococcal disease in college students. *Clin Infect Dis*. 2001;33:737-739.
- Warren HS Jr, Gonzalez RG, Tian D. Case 38-2003: A 12-year-old girl with fever and coma. *N Engl J Med*. 2003;249:2341-2349.
- Harrison LH, Pass MA, Mendelsohn AB, et al. Invasive meningococcal disease in adolescents and young adults. *JAMA*. 2001;286:694-699.
- Rosenstein NE, Perkins BA, Stephens DS, et al. The changing epidemiology of meningococcal disease in the United States, 1992–1996. *J Infect Dis*. 1999;180:1894-1901.
- CDC. Prevention and control of meningococcal disease and Meningococcal disease and college students: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Morb Mortal Wkly Rep*. 2000;49:1-20.
- CDC. Summary of notifiable diseases—United States, 1996–2002. *MMWR Morb Mortal Wkly Rep*. 1997;45:10; 1998;46:10; 1999;47:12; 2001;48:12; 2002;49:12; 2003;50:15; 2004;51:28.
- CDC. Deaths: final data for 2001. *Natl Vital Stat Rep*. 1998;47:51; 1999;47:52; 2000;48:51; 2001;49:27; 2002;50:28; 2003;52:30.
- Fischer M, Hedberg K, Cardosi P et al. Tobacco smoke as a risk factor for meningococcal disease. *Pediatr Infect Dis J*. 1997;16:979-983.
- Bruce MG, Rosenstein NE, Capparella JM, et al. Risk factors for meningococcal disease in college students. *JAMA*. 2001; 286:688-693.
- Brundage JF, Ryan MAK, Feighner BH, Erdtmann FJ. Meningococcal disease among United States military service members in relation to routine uses of vaccines with different serogroup-specific components, 1964–1998. *Clin Infect Dis*. 2002;35:1376-1381.
- Lingappa JR, Rosenstein N, Zell ER, Shutt KA, et al. Surveillance for meningococcal disease and strategies for use of conjugate meningococcal vaccines in the United States. *Vaccine*. 2001; 19:4566-4575.
- AAP Committee on Infectious Diseases. Meningococcal disease prevention and control strategies for practice-based physicians (addendum: recommendations for college students). *Pediatrics*. 2000;106:1500-1504.
- ACHA. Meningococcal meningitis FAQs. Available at: http://www.acha.org/projects_programs/men.cfm. Accessed January 29, 2003.
- National Meningitis Association (NMA). Legislation. Available at: <http://www.nmaus.org/legislation/index.htm>. Accessed November 16, 2004.
- AAP Committee on Infectious Diseases. Recommended childhood and adolescent immunization schedule—United States, July–December 2004. *Pediatrics*. 2004;113:1448-1449.
- CDC. Recommended adult immunization schedule by age group and medical conditions United States, 2003-2004. Available at: <http://www.cdc.gov/nip/recs/adult-schedule.htm#print>. Accessed February 3, 2004.

For more information— talk to your doctor...

Be sure to talk with your doctor or health-care professional about meningococcal vaccination. You can also get information from your local public health clinic or the student health service at your high school or college.

Questions to ask my doctor:

Should my child be vaccinated?

...or visit these Web sites*

www.cdc.gov/nip

www.meningococcaldisease.com

www.vaccinesafety.edu

www.partnersforimmunization.org

www.immunize.org

www.immunizationinfo.org

www.nfid.org/ncai

www.mayoclinic.com

*Sanofi Pasteur Inc. provides these links as a service to Web site visitors and users; however, it assumes no responsibility for the information presented on any Web sites but its own.

Knowing the warning signs of meningococcal disease can be potentially life saving.

Symptoms include: headache, fever, stiff neck, extreme fatigue, vomiting, light sensitivity, and a rash of small purplish black-red dots.^{1,2}

Remember: Time is critical when it comes to treating meningococcal disease. **Contact your doctor or seek medical attention** if you suspect meningococcal disease.

This brochure is being provided as a public health service by your health-care provider and Sanofi Pasteur Inc.