We are in the midst of rattlesnake season, when the highest population of out-and-about rattlesnakes coincides with peak outdoor family activities. The California Poison Control System manages and reports about 250 cases of rattlesnake bites each year, with more than 50 cases occurring in Southern California.

California is home to 8 species of rattlesnakes, which may be spotted anywhere from off-road dirt trails to residents’ backyards and front porches. The most common rattlesnakes in this region include the Western Diamondback and Southern Pacific, although bites from Sidewinder, Speckled, Red Diamond, and Mojave are reported every year.

For unsuspecting home gardeners, hikers, or children playing in Griffith Park, rattlesnake bites are frightening, although not entirely unexpected, events. The primary concept to grasp is that people live in the rattlesnakes’ backyard, not the other way around. Therefore, prevention and avoidance are the most important methods to deal with rattlesnakes.

**Symptoms of a Rattlesnake Envenomation**
If a patient is bitten by a rattlesnake, he or she will first experience stinging and burning at the site of the bite. Symptoms often progress over the next several hours to nausea, vomiting, sweating, numbness, tingling (sometimes in places remote from the bite site), and mildly increased heart rate and blood pressure. Progressive, painful swelling of the affected extremity ensues.

**Evaluating a Patient with Rattlesnake Envenomation**
When evaluating a patient who has been bitten by a rattlesnake, it is unnecessary to ascertain the exact species since virtually all such envenomations are handled the same way.

Hematological abnormalities are common, with marked decreases in

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A new report published by the Los Angeles County Department of Public Health last month highlights the need for continued efforts to reduce smoking rates in LA County. The report, titled “Cigarette Smoking in Los Angeles County: Local Data to Inform Tobacco Policy,” breaks down adult cigarette smoking rates by geographic area and finds that there are great disparities among cities and communities when it comes to tobacco use.

According to the report, some of the cities and communities with higher and lower adult smoking rates are as follows:

**Higher**—Quartz Hill (21.9%), Lancaster (21.7%), West Hollywood (19.6%), Lake Los Angeles (19%),
platelets and fibrinogen, and elevations in prothrombin time (PT) and partial thromboplastin time (PTT). These laboratory indices initially suggest that the patient has disseminated intravascular coagulation (DIC); however, the peripheral smear evaluation reveals no microangiopathic hemolytic process (the defining feature of DIC).

The components of rattlesnake venom yield a “positive DIC panel” by alternate mechanisms. Therefore, snakebite patients do not generally require administration of blood products. In fact, when blood products are given to patients, they result in no change in coagulation parameters. On rare occasions when the snake's fangs manage to pierce through a major artery or vein, the patient may experience a rapid progression of symptoms, including true disseminated intravascular coagulation and spontaneous bleeding. These patients are treated symptomatically, with blood products and antivenom.

**Treating a Patient with a Rattlesnake Envenomation**

If a patient has been bitten by a rattlesnake, call the California Poison Control System (800/222-1222). Experts in medical toxicology and poison information are available 24/7 to assist with up-to-date guidelines to fit the patient's clinical situation.

In general, patients are assessed for progression of swelling and laboratory evidence of coagulation abnormalities, suggesting the need to administer rattlesnake antivenom. Antivenom is administered until the swelling and laboratory abnormalities are controlled. Supportive care is paramount, which includes close observation, elevation of the extremity above the level of the heart, and pain control (often with narcotics). Some patients may experience fasciculations, which may be relieved by benzodiazepines. A typical hospitalization is 2-3 days; however, severe cases may require longer stays.

Myths about Rattlesnakes Bites

**Myth**
Antibiotics are indicated for all snake bites.

**Fact**
Rattlesnakes do not carry bacteria in their mouths. Routine use of antibiotics after envenomation is usually unnecessary in the absence of a wound complication.

**Myth**
Bites from “baby rattlesnakes” are more dangerous than bites from older rattlesnakes.

**Fact**
Because “baby rattlesnakes” cannot control the amount of venom injected into the bite site, some people believe that they pose a greater danger than more mature rattlesnakes. This is untrue. Since younger rattlesnakes tend to produce less venom overall, the clinical course and outcome of envenomations from any aged rattlesnake are similar.

**Myth**
Surgical intervention with fasciotomy is often indicated in rattlesnake envenomation.

**Fact**
Surgical intervention with fasciotomy is almost never indicated in rattlesnake envenomation. The affected extremity may feel quite tense, with diminished palpable pulses, giving the appearance of a compartment syndrome. Despite the ominous appearance, compartment pressure is usually normal because envenomations are subcutaneous injuries. Studies confirm that supportive care and the administration of antivenom produces better clinical outcomes than surgical fasciotomy.

Cyrus Rangan, MD, FAAP, ACMT, is director, Bureau of Toxicology and Environmental Assessment, Los Angeles County Department of Public Health.

**REPORT SHOWS SMOKING RATES**

Palmdale (18.5%), Hermosa Beach (17.4%), and Redondo Beach (16%).

**Lower**—San Marino (5.3%), Malibu (5.8%), La Canada-Flintridge (6.4%), Calabasas (7.3%), Palos Verdes Estates (7.4%), Agoura Hills (7.7%), and Westlake Village (7.9%).

By showing where smoking rates are highest, the report can assist policymakers in developing support for and establishing programs and policies in the fight against tobacco use.

A full copy of the report may be viewed at [www.publichealth.lacounty.gov/ha](http://www.publichealth.lacounty.gov/ha).

Physicians Play an Important Role in Treating Tobacco Addiction

In addition to tobacco-cessation policies on a community level, it is important to address tobacco cessation on an individual level. Physicians have a prime opportunity to do so during their patients’ office visits.

By following recommended guidelines, effective tobacco use interventions can take as little as 30 seconds. Advice from doctors to their patients to stop smoking is the most cost-effective use of time to increase the quality and length of their patients’ lives.

To learn about these guidelines, plus have the opportunity to earn continuing medical education credits, physicians may log on to [https://publichealth.lacounty.gov/elearning](https://publichealth.lacounty.gov/elearning) and complete the module “Successful Treatment of Tobacco Addiction.”
Human Rabies: Vaccine Schedule Reduced to 4 Doses

By Rachel Given, MD, MPH

Rabies is a zoonotic disease caused by RNA viruses in the family Rhabdoviridae, genus Lyssavirus. The virus is most commonly transmitted in the saliva of rabid mammals via a bite exposure. The rabies virus infects peripheral nerves and ascends to the central nervous system, ultimately causing disease in the brain and death.

Physicians and veterinarians from the LA County Department of Public Health’s Acute Communicable Disease Control Program and the Veterinary Public Health Program receive hundreds of phone calls annually from medical providers, bite victims, and family members requesting recommendations for rabies post-exposure prophylaxis (PEP) for persons bitten by dogs, cats, raccoons, squirrels, and coyotes as well as those exposed to bats.

**Rabies Cases in LA County and the United States**

Rabies control programs in the U.S. have been a great success. Nonetheless, people still fear exposure to rabies infection from dog bites, even though the last rabid dog that acquired disease in LA County was documented in 1978. The 2 most recent human rabies cases diagnosed in the county occurred in 1975 and 2005, most likely from dog bite exposures in Mexico and El Salvador, respectively. State-mandated rabies control programs throughout California and the U.S. have resulted in a decrease, from about 10 human cases in the nation annually in the 1950s to about 1 to 4 rabies human cases today.

Within the U.S., bat exposures are considered high risk for potential rabies transmission. Of the 4 human rabies deaths documented in the U.S. since 2006, 3 cases had bat exposures. In LA County, from January 2009 through May 2010, 14 bats have tested positive for rabies. Determination of exposure to bat saliva is difficult, especially with children who handle sick or dead bats.

Rabies is a preventable viral disease in humans and other mammals. Prevention occurs through rabies vaccine programs for dogs and cats, local animal control programs, and effective use of rabies PEP in persons with high-risk animal exposure. Routine rabies vaccination is recommended for certain high risk groups, such as veterinarians and animal control workers.

**New ACIP Guidelines on Post-Exposure Rabies Vaccinations**

Recently, new guidelines were issued by the Advisory Committee on Immunization Practices (ACIP) that reduce the number of post-exposure rabies vaccinations from 5 to 4 doses in most individuals. Details are presented in the April 2010 issue of the *Morbidity and Mortality Weekly Report* (see [www.cdc.gov/rabies/resources/acip_recommendations.html](http://www.cdc.gov/rabies/resources/acip_recommendations.html)).

The reduction in doses for PEP was based in part on evidence from rabies virus pathogenesis data, experimental animal work, clinical studies, and epidemiologic surveillance. These studies indicated that 4 vaccine doses in combination with rabies immune globulin (RIG) at the time of initial treatment elicited adequate immune response and that a fifth dose of vaccine did not contribute to favorable outcomes.

For persons who have not been previously vaccinated, RIG should be administered according to weight, followed...
Human Rabies from page 3

by 4 doses (1 mL each) of either human diploid cell vaccine (HDCV) – Imovax by Sanofi Pasteur or purified chick embryo cell vaccine (PCECV) – RabAvert by Novartis Vaccines and Diagnostics, given intramuscularly as soon as possible (day 0) after exposure. This should be followed by additional doses on days 3, 7, and 14. Rabies vaccine can be ordered directly by physicians from the manufacturers (see box below) and is also available in most emergency rooms when needed urgently.

Individuals with altered immune competence should continue to receive the 5-dose vaccination regimen. For persons who have previously received rabies vaccination with any cell culture-based vaccine, the recommended 2-dose PEP booster has not changed.

Reporting Animal Bites

All animal bites (except from rodents, squirrels and rabbits) are reportable to the Veterinary Public Health and Rabies Control Program at (213) 989-7060 or (877) 747-2243.

Biting animals are either quarantined (domestic or low-risk animals) and observed for rabies or are tested for rabies (high-risk wild mammals or pets with progressive neurologic symptoms). Most quarantines are performed in the pet owner’s home. Problems with stray pets or wild animals should be reported to the local animal control agency. A list of these agencies can be found at www.publichealth.lacounty.gov/vet/AnimalControlList.htm. These agencies report bite incidents to public health and assist in quarantine of strays and preparation of specimens for rabies testing. Rabies tests are carried out at the Los Angeles County Public Health Laboratory. Testing on an emergency basis can be arranged in high-risk cases.

The Department of Public Health will provide rabies PEP for uninsured individuals upon approval from a public health physician; please call to discuss this option.

For questions regarding animal bites and their risk of possible rabies exposure, or for referrals for rabies post-exposure prophylaxis, public health physicians are available 7 days a week. They can be reached at (213) 240-7941 during normal business hours (M-F), and after-hours through the LA County Operator at (213) 974-1234.

Rachel Civen, MD, MPH, is a medical epidemiologist with the Acute Communicable Disease Control Program, Los Angeles County Department of Public Health.

Rabies Vaccine Ordering Information

<table>
<thead>
<tr>
<th>Novartis (RabAvert – PCECV)</th>
<th>Sanofi Pasteur (Imovax – HDCV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(800) 244-7668</td>
<td>(800) 822-2463</td>
</tr>
<tr>
<td><a href="http://www.novartisvaccinesdirect.com">www.novartisvaccinesdirect.com</a></td>
<td><a href="http://www.vaccineshoppe.com">www.vaccineshoppe.com</a></td>
</tr>
</tbody>
</table>

For Post-Exposure Prophylaxis: Available for ordering without restrictions. Often able to receive order rapidly.

For Pre-Exposure Prophylaxis: Available for ordering without restrictions.

From Novartis: Vaccine can be ordered and received overnight. No minimum. Must either set up an account (adds 24- to 48-hour delay) or pay for order by credit card. No charge to set up or maintain account in advance. As of 9/16/09, cost is $217 per dose.

Distributors: Vaccines may be available through biologicals distributors. Ask your distributor in advance. Ask about minimum order, speed of delivery, and cost.

From Sanofi: Vaccine can be ordered and received overnight if clinic has account already set up. No minimum order, but $25 surcharge on orders under $600. Account set-up takes up to 24 hours. No charge to set up or maintain account in advance. As of 9/16/09, cost is $195 per dose.

Distributors: Vaccines may be available through biologicals distributors. Ask your distributor in advance. Ask about minimum order, speed of delivery, and cost.

Resources

www.publichealth.lacounty.gov/acd/Diseases/Rabies.htm
www.publichealth.lacounty.gov/vet/rabies.htm
www.cdc.gov/rabies/resources/acip_recommendations.html
www.cdc.gov/mmwr/preview/mmwrhtml/rr5703a1.htm

Rachel Civen, MD, MPH, is a medical epidemiologist with the Acute Communicable Disease Control Program, Los Angeles County Department of Public Health.
The California Immunization Registry (CAIR), formerly known as the Los Angeles-Orange Immunization Network (LINK), is a secure, web-based, confidential system that keeps track of patients' immunization records. CAIR allows physicians to view, update, and store consolidated immunization records that include immunizations given in their practices, as well as immunizations given by other physicians who use the registry.

The local CAIR region covers Los Angeles and Orange Counties. In this region, the registry is used by more than 900 health care providers, including physicians, clinics, hospitals, schools, and WIC centers. Currently, there are almost 2 million immunization records for children, adolescents, and adults in the registry; nearly half of all children under age 6 in this region have a record in CAIR. Work is currently underway to connect California's 10 regional registries so that users will be able to access records from across the state.

There are many reasons to use CAIR. Here are just a few:

1. **CAIR helps to administer the right vaccines at the right time. The system can be used to...**
   - View immunizations given in a physician's practice and other physician offices.
   - Instantly identify immunizations that are due at the office visit, as well as the next vaccine due date.
   - Generate reminder and recall notices to let patients know which immunizations are due or overdue.

2. **CAIR helps to manage a practice's vaccine supply/inventory.**
   - The system automatically records manufacturer and lot number, saving time and reducing errors.
   - CAIR tracks up-to-the-minute vaccine inventory, avoiding the need to maintain a separate inventory system.
   - CAIR generates vaccine usage reports so that a practice can avoid over- or under-ordering vaccines.

3. **CAIR saves time and money.**
   - Practices participating in the Vaccines for Children (VFC) Program saved $450 a year by using an immunization registry.
   - Immunizations given by other health care providers can be viewed, thereby preventing costly duplicate immunizations.
   - Because CAIR prints the California Immunization Record (Yellow Card), physicians won't need to handwrite records or recreate them if they are lost or if patients forget to bring them.

CAIR is available to all immunization providers at no charge. For more information, visit www.immunizelink.org or call the CAIR Los Angeles-Orange Region Help Desk at (213) 351-7411.

For the 2010-2011 flu season, the U.S. Advisory Committee on Immunization Practices recommends universal influenza vaccination for all persons 6 months of age and older who do not have a contraindication to vaccination, such as an egg allergy.

A single trivalent vaccine will protect your patients from the flu virus strains that are most likely to circulate in the fall: A/California/7/2009, A/Perth/16/2009, and B/Brisbane/60/2008. Since the pandemic H1N1 strain is included in this year's seasonal vaccine, there will be no need for a separate pandemic H1N1 flu vaccination.

Trivalent seasonal flu vaccine will not be provided through the national centralized flu vaccine distribution program that was in place to support pandemic H1N1 flu vaccination.

Providers who usually purchase flu vaccine and have not yet placed a flu vaccine order with a manufacturer or distributor should do so immediately. Lists of manufacturers and distributors are posted at www.flusupplynews.com/resources.cfm and www.preventinfluenza.org/profs_production.asp.

**Stay up-to-date with the latest flu vaccination information by visiting the following websites:**

- Los Angeles County Department of Public Health: www.publichealth.lacounty.gov
- California Department of Public Health: www.getimmunizedca.org
- California Immunization Coalition: www.immunizeca.org
Clinician counseling for physical activity usually includes three components: aerobic activity, muscle-strengthening activities, and flexibility training.

Benefits of Flexibility Training
Flexibility training, or stretching, lengthens muscles and thus enhances a joint’s capacity to move through a complete range of motion (ROM). Established benefits include:

- Improved functional ROM across the lifespan
- Reduced back pain and injury
- Improved circulation, balance, coordination and posture
- Promotion of mental relaxation and stress reduction
- Management of some diseases in older adults.

These benefits are of particular importance for aging adults, as decreased flexibility is often associated with declines in physical health and functional status. Increased ROM has a positive impact on performance of Activities of Daily Living (ADLs) and, along with improved balance and coordination, decreases incidence of falls and age-related changes in gait.

Long-standing assumptions that stretching immediately prior to exercise can prevent incidence and severity of athletic injury remain in question. Some recent studies assert that it does prevent injury, particularly when paired with warm-up activity. Meanwhile, other reviews note a lack of robust evidence to support or discourage pre-exercise stretching. Despite this particular debate, regular stretching provides the long-term benefits listed above.

Communicating the How-Tos of Flexibility Training
Flexibility training techniques continue to evolve, and there are currently no universal guidelines for prescription of type, duration, and number of repetitions of any given technique. The following recommendations should be tailored to each patient’s fitness level and any limiting factors.

- Training should occur after warm-up, aerobic, or muscle-strengthening activities.
- ballistic (bouncing) stretches can increase risk of injury. Encourage patients to participate in static (hold) stretching.
- Patients should hold stretches between 15 and 30 seconds; four sets of 15 to 20 seconds per stretch result in optimal gain.
- Patients should stretch to the limit of movement, but not to the point of pain.
- Breathing should remain slow and rhythmic.
- All major muscle groups should be engaged in each training session.
- Flexibility training should occur at least 2 to 3 times per week.

While a detailed conversation with each patient may not be feasible, a quick overview of the benefits of flexibility training and provision of an educational resource can help pave the way toward positive behavior change. Consider providing patients with a copy of the “Gentle Stretching Exercises” handout (page 7) as a first step.


Kim Harrison Eowan, MPH, CHES, is deputy director/wellness manager, Health Education Administration, Los Angeles County Department of Public Health.

REFERENCES
Regular stretching helps to fight muscle tension, improve posture, and reduce the risk of injury. Try these gentle stretches after you warm up your muscles, and again after you cool down from a walk or other activity. Never hold your breath as you stretch, and stretch only as far as you feel comfortable.

**Chest & Arms**
- Stand with arms at your sides and feet shoulder width apart. Look straight ahead.
- Extend both arms behind your back and clasp your hands together.
- Be sure to keep your back straight and relax your shoulders.
- Hold the stretch as you count slowly to 20, breathing deeply.
- Release the stretch and repeat.

**Hamstrings & Calves**
- Stand facing a sturdy chair.
- Slowly bend forward at the hip, keeping your legs straight without locking your knees.
- Rest your hands on the chair with your elbows slightly bent and your back flat.
- Hold the stretch as you count slowly to 20, breathing deeply.
- Release the stretch and repeat.

**Quadriceps**
- Stand next to a sturdy chair with your feet shoulder width apart. Keep your legs straight without locking your knees. Hold the chair for balance with your left hand.
- Keeping your back straight, bend your right leg back and hold your right foot or ankle in your right hand until your thigh is perpendicular to the ground.
- Hold the stretch as you count slowly to 20, breathing deeply.
- Release the stretch and repeat with the other leg.

**Neck, Upper Back & Shoulders**
- Stand with arms at your sides and feet shoulder width apart. Keep your legs straight without locking your knees.
- Clasp your hands in front of you and rotate them so that your palms face the ground.
- Keeping your back straight, raise your arms to about chest height and press your palms away from your body.
- Hold the stretch as you count slowly to 20, breathing deeply.
- Release the stretch and repeat.

Adapted from CDC/Tufts University's "Growing Stronger"
Rx for Prevention is published 10 times a year by the Los Angeles County Department of Public Health. If you would like to receive this newsletter by e-mail, go to www.publichealth.lacounty.gov and subscribe to the ListServ for Rx for Prevention.

Upcoming Training

Adult Immunizations: The Challenges and Opportunities to Vaccinate the Medically Underserved
Free continuing education workshop that highlights adult immunization standard of care guidelines with a focus on at-risk communities, such as adults experiencing homelessness.
Hosted by the Immunization Coalition of LA County, in collaboration with the LA County Department of Public Health and the UCLA School of Nursing at Union Rescue Mission.
- September 21, 2010  |  10:45 am
- Union Rescue Mission
545 S. San Pedro St., Los Angeles, CA 90013
Pre-registration is required. To do so, contact Wendy Berger, MPH. at (213) 351-7499 or Carrie Bach, RN, MPH, at (213) 240-7944.

Index of Disease Reporting Forms

All case reporting forms from the LA County Department of Public Health are available by telephone or Internet.

Animal Bite Report Form
Veterinary Public Health (877) 747-2243
www.publichealth.lacounty.gov/vet/biteintro.htm

Animal Diseases and Syndrome Report Form
Veterinary Public Health (877) 747-2243
www.publichealth.lacounty.gov/vet/disintro.htm

Adult HIV/AIDS Case Report Form
For patients over 13 years of age at time of diagnosis
HIV Epidemiology Program (213) 351-8196
www.publichealth.lacounty.gov/HIV/hivreporting.htm

Pediatric HIV/AIDS Case Report Form
For patients less than 13 years of age at time of diagnosis
Pediatric AIDS Surveillance Program (213) 351-8153
Must first call program before reporting
www.publichealth.lacounty.gov/HIV/hivreporting.htm

Confidential Morbidity Report of Tuberculosis (TB) Suspects & Cases
Tuberculosis Control (213) 744-6160
www.publichealth.lacounty.gov/tb/forms/cmrd.pdf

Lead Reporting
No reporting form. Reports are taken over the phone.
Lead Program (323) 869-7195

Reportable Diseases & Conditions
Confidential Morbidity Report
Morbidity Unit (888) 397-3993
Acute Communicable Disease Control (213) 240-7941

Sexually Transmitted Disease
Confidential Morbidity Report
(213) 744-3070
www.publichealth.lacounty.gov/std/providers.htm (web page)
www.publichealth.lacounty.gov/std/docs/H1911A.pdf (form)

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