



HEALTH AND HUMAN SERVICES

RICHARD O. BRAJER
Secretary

DANIEL STALEY
Director, Division of Public Health

June 1, 2016

To: Local Environmental Health Staff, Local Health Directors and Summer Camp Directors

From: Megan Davies, MD, State Epidemiologist and Epidemiology Section Director
Larry D. Michael, REHS, MPH, Environmental Health Section Director

Subject: **Tick and Mosquito Bite Prevention at Summer Camps**

Summer camps represent a great opportunity for children to spend time outdoors and participate in a variety of educational, environmental and recreational opportunities. However, just like at home, children may be exposed to ticks and mosquitoes that, in addition to being a nuisance, can cause disease. We would like to take this opportunity to provide some suggestions on how children and camp administrators can be prepared to minimize the impact of ticks and mosquitoes. At this time there have been no reports of people contracting Zika, Dengue, or Chikungunya viruses in NC. All cases of these conditions identified in NC have been travel associated.

Tick and mosquito-borne diseases are common in NC. For the 6-year time period from 2010 through 2015 an annual average of 430 cases of Rocky Mountain spotted fever, 84 cases of Ehrlichiosis, and 141 cases of Lyme disease have been reported from across the state. A majority of these conditions are transmitted during the summer months. While tick-borne diseases such as these are most common, mosquito-borne diseases are also reported. During the same 6-year time period an average of 20 cases of LaCrosse Encephalitis per year was reported. Most LaCrosse cases are transmitted in late summer (see graphs next page). However, the distribution of LaCrosse cases is not uniform; over 75% of cases are reported from the southwestern portion of NC, primarily Henderson, Transylvania, Jackson, Swain, Haywood and Buncombe Counties. Fortunately, following the steps below can reduce the risk of acquiring all of these vector-borne diseases.

Prior to the arrival of children at camp:

1. Request parents educate children about appropriate use of repellents such as DEET, which is used on exposed skin.
2. Have children bring clothing that is treated with permethrin, which is an effective repellent and acaricide.
3. Have children bring fine-tipped tweezers that they (or camp medical personnel) can use to remove attached ticks.

Camp Administrators:

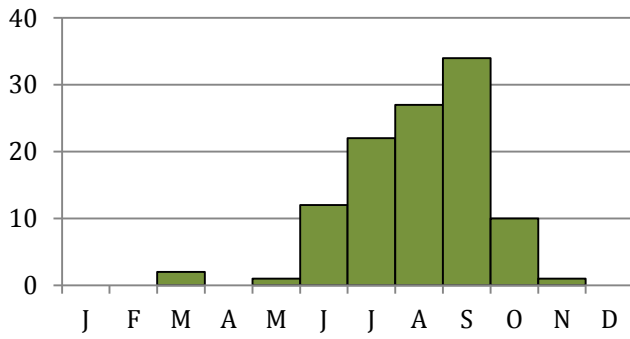
1. Educate children about avoiding tick habitat (wooded and bushy areas with high grass and leaf litter) and eliminate tick habitat
2. Instruct children to walk in the center of trails; this will help avoid tick habitat
3. Eliminate mosquito-breeding sites by emptying standing water from flowerpots, buckets, barrels, tires and other containers such as clogged rain gutters at least weekly. Drill holes in tire swings so water drains out.
4. Educate campers upon arrival about proper tick removal: http://www.cdc.gov/ticks/removing_a_tick.html.
5. Instruct children to conduct daily tick checks and remove them appropriately, or see camp medical personnel.

For additional information:

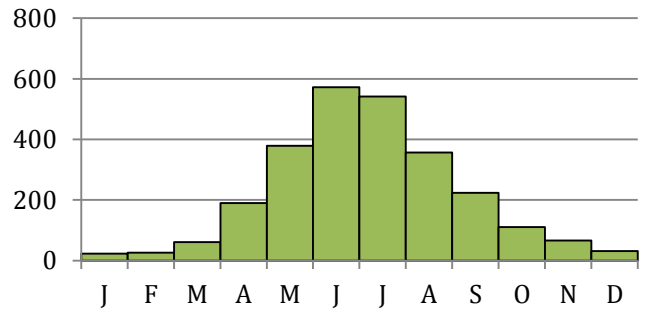
1. CDC information on preventing mosquito bites: <http://www.cdc.gov/lac/gen/pre.html>.
2. CDC information on preventing tick bites: <http://www.cdc.gov/Features/stopticks/>.
3. Information on tick and mosquito borne diseases in NC: <http://epi.publichealth.nc.gov/cd/diseases/vector.html>.
4. North Carolina Tick-Borne disease poster: http://epi.publichealth.nc.gov/cd/ticks/tick_poster_8x11.pdf.

If you need any other information or would like to have copies of the tick-borne disease poster please contact the Communicable Disease Branch at 919-733-3419. Thank you for your time and assistance in this matter and we hope you have a safe and successful 2016 camp season!

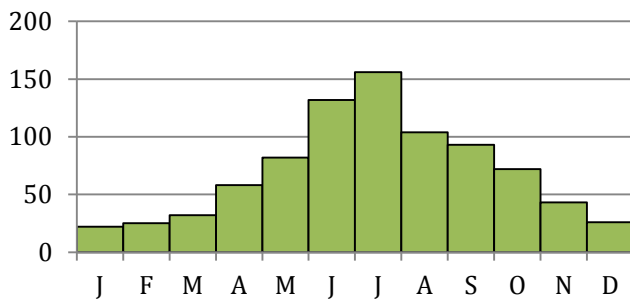
La Crosse Encephalitis cases by Month of Illness Onset, NC, 2010-2015; n=119



Rocky Mountain Spotted Fever cases by Month of Illness Onset, NC, 2010-2015; n=2579



Lyme disease cases by Month of Illness Onset, NC, 2010-2015; n=845



Monocytic Ehrlichiosis cases by Month of Illness Onset, NC, 2010-2015; n=508

