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CRAZY LIKE A FOX, SOUTH FLORIDA STYLE

By Anthony Stidham, MPH, DHSc©

It's one of those "only-in-South Florida" stories. On Tuesday, December 18, 2007, the Palm Beach County Health Department (PBCHD) Epidemiology and Disease Control Program was notified of a red fox biting elder residents out for a walk in Boynton Beach east of the I-95. The fox also jumped a fence and bit a child, who was playing outside in the yard of a near-by daycare facility. Overall, the fox bit a total of four adults and one child.

Because the fox was presumed to be rabid, PBCHD Epidemiology staff followed up with all of the individuals bitten by the fox and recommended for each of the individuals to receive post-exposure prophylaxis (PEP), to include Human Rabies Immune Globulin (HRIG) and five human rabies vaccine series shots over the course of 28 days. Three adults and the one child bitten by the fox received the Human Rabies Immune Globulin (HRIG), the first two doses of human rabies vaccine series shots, and a tetanus shot at a local hospital emergency room. All of these patients went to the Palm Beach County Health Department/Delray Beach Health Center to receive the last three human rabies vaccine series shots. The fourth adult bitten by the fox initially went to a local hospital emergency room to receive the HRIG, the first dose of human rabies vaccine, and a tetanus shot; and then received the remainder of the human rabies vaccine series shots at a hospital in his state of residence.

On December 20, 2007 Palm Beach County Animal Care and Control captured a fox in the vicinity of where the fox bites occurred. That fox's brain tested positive for rabies at the Florida Department of Health – Bureau of Laboratories - Lantana.

Rabies has been recognized as a disease of man and mammals since antiquity. Rabies is a deadly viral disease that can be prevented, but not cured. The virus attacks the nerves and brain tissue of warm-blooded animals including people. When an animal is sick with rabies, the virus is shed in the saliva and can be passed to another animal or a person, usually through a bite. It is also quite possible, but quite rare that transmission may also occur if this saliva or the animal's nervous tissue enters an open wound or break in the skin, the mouth, nose or eyes of another animal or person.

See Fox, page 2

Fox, continued from page 1

THE INFECTIOUS PATH OF THE RABIES VIRUS

1. The fox is bitten by a rabid animal.	**2. Rabies virus enters the fox through infected saliva.**	**3. Rabies virus spreads through the nerves to the spinal cord and brain.**
		**4. The virus incubates in the fox's body for approximately 9-109 days. The fox has no signs of illness during this time.**
	6. The infected fox usually dies within 1-15 days of becoming sick.	**5. When it reaches the fox's brain, the virus multiplies rapidly, passes to the salivary glands, and the fox begins to show signs of the disease. The fox can now spread rabies to humans and other animals.**

Foxes are in the same family as dogs, coyotes, and wolves (Canidae). They do not bark like dogs (unless they need to give a warning). They do howl and whine. Foxes seen in Florida are not always red. Sometimes they look black or silver, but they always have white on the tips of their tails. A red fox is about three feet long from its nose to the end of its bushy tail, but it only weighs about 10 pounds. It looks like it should weigh more, but most of that size is fluffy fur. In the wild, red foxes usually only live about 5 years. Their main predator is man. They are hunted for sport, hunted for their fur coats, shot by farmers, or hit by cars. If a fox walks up to a human and acts brave or friendly, it is probably sick. **The best thing to do is NEVER touch, feed, or approach a fox or any wild animal.**

Nationally, foxes accounted for 6.2% of all cases of rabies in animals reported in 2006. The total of 427 cases of rabies in foxes represented a 13.6% increase from 2005. Most cases of rabies in foxes (356 or 83.4%) were reported by states affected by the raccoon rabies virus variant.

The first rabid fox in Florida was reported in 1913 and the next rabid fox in 1942. Outbreaks of rabies in foxes were reported in the 1940s and 1950s. Most rabid foxes were grey foxes. Foxes are very susceptible to the raccoon strain of the rabies virus.

During the eleven years from 1997 through 2007, there were a total of 315 cases of rabies in foxes in Florida, resulting in an average of 28.6 cases per year. In Palm Beach County, between 1997 and 2007, there were a total of 21 cases of rabies in foxes, resulting in an average of 1.9 cases per year. In 2007, there were a total of three cases of rabies in animals in Palm Beach County - one in a raccoon and two in foxes. To date, there are no cases of rabies in foxes in 2008 in Palm Beach County, Florida.

REFERENCE: Florida Department of Health, Division of Environmental Health (2008). 20 Year Animal Rabies Summary by Species. Accessed and retrieved on February 1, 2008 from: http://www.doh.state.fl.us/environment/community/rabies/Data/Rabiestable1987_2006.pdf

HOLY MACKEREL—IT'S CIGUATERA!

Admire barracuda…. just don't eat them - <u>at</u> <u>all</u>!
And don't eat snapper, grouper or amberjack that weigh greater than 5 pounds.

By JoEllen Alvarez, RN, MPH





Fish is a healthy part of any diet and South Florida has many wonderful varieties of fresh fish. However, some varieties of reef or bottom-dwelling fish such as barracuda, snapper, grouper and amberjack can cause a severe illness known as ciguatera fish poisoning.

In the past year Palm Beach County Health Department investigated 11 cases of ciguatera fish poisoning. The most recent occurrences involved 3 separate episodes of ciguatera fish poisoning that affected a total of 10 people. The first occurrence was a family of 5, who became ill after ingesting a barracuda they had caught in Palm Beach County waters. The second incidence occurred after a family ingested a grouper that was caught in Broward County waters. Two people were affected. The third incidence was a family of three, who ingested a barracuda purchased at a local fish market.

Ciguatera presents with a characteristic gastrointestinal (GI) and neurological syndrome that may occur within 1 hour after eating tropical reef fish. GI symptoms (nausea, vomiting, diarrhea, abdominal pain) occur first, usually within 24 hours of consumption. Neurological symptoms include intense itching, joint and muscle pain, weakness of the lower extremities, tingling of the lips, "aching teeth," and hot/cold temperature reversal (ice cream tastes hot or feels hot to touch; hot coffee seems cold to taste or touch). In very severe cases, neurological symptoms may progress to coma and respiratory arrest within the first 24 hours of illness.

Intravenous infusion of mannitol (1 gram/kg of a 20% solution over 45 minutes) may have a dramatic effect on acute symptoms, particularly in severe cases. It may be lifesaving in severe cases that have progressed to coma. The earlier mannitol treatment is begun, the more likely it is to be successful. *See Ciguatera, page 4*

Ciguatera, continued from page 3

Most patients recover completely within a few weeks, but intermittent reoccurrence of symptoms can appear over a period of months or years. Activities such as sexual intercourse and drinking alcohol may exacerbate the symptoms. Transmission of symptoms to a sexual partner via semen during sexual intercourse has been reported. Transmission of symptoms to a baby via breast milk has also been reported.

Ciguatera fish poisoning is a reportable disease in Florida. A clinically compatible patient with a history of fish consumption in the 24 hours before onset of symptoms can be reported. Lab confirmation is not necessary for case confirmation. Testing of left-over fish is available through the FDA. Testing has also been developed for blood and urine through the FDA at the discretion of the physician/emergency room.

Ciguatera fish poisoning is caused by eating fish contaminated with a toxin known as ciguatoxin. Reef fish (any fish living in warm tropical waters) eat algae growing on underwater reefs that contain toxins which in turn cause the fish to become toxic. The effect is magnified through the food chain so that large predatory fish become the most toxic. The toxin is not inactivated by cooking or freezing the fish before consumption. The fish looks, smells and tastes perfectly fine.

Ciguatera is only common in tropical waters, particularly the Pacific, Caribbean and waters off the Florida coast. Ciguatoxin is found in over 400 species of reef fish, and therefore avoidance of consumption of all reef fish (any fish living in warm tropical waters) is the only sure way to avoid exposure to the toxin. A more conservative approach to avoid ciguatera fish poisoning would be to avoid consumption of large predatory reef fish. This includes snapper, grouper or amberjack greater than 5 pounds. Consumption of all barracuda, no matter the size, should be avoided. Yellowtail snapper and dolphin (mahi-mahi) are safe fish to eat at any size in the South Florida and Caribbean areas.

So don't give up eating fresh fish, one of the pleasures of South Florida living. Use caution in keeping what you catch and in buying large reef fish from markets and fishermen. Ask restaurants about the source and original size of the snapper, grouper or amberjack reef fish they serve. Avoid the big fish – you'll be glad you did! Ciguatera fish poisoning could end your fun!

PALM BEACH COUNTY HEALTH DEPARTMENT
2008 REPORTED COMMUNICABLE DISEASES
WEEK 6, 2008 (ENDING DATE 02/09/08)

	This Week	This Year	Same Time Last Year
CENTRAL NERVOUS SYSTEM AND INVASIVE DISEASES:			
Haemophilus influenzae primary bacteremia	0	3	2
Haemophilus influenzae pneumonia	0	2	0
Meningococcal disease	0	1	0
Group B Streptococcus meningitis	0	0	0
Listeria monocytogenes meningitis	0	0	0
Listeriosis	0	1	1
Streptococcus pneumoniae meningitis	0	1	1
Streptococcus pneumoniae invasive disease, drug-resistant	0	6	3
Streptococcus pneumoniae invasive disease, susceptible	1	8	4
Streptococcal disease, invasive Group A	0	3	1
Bacterial meningitis, other	0	0	1
West Nile Virus, neuroinvasive	0	0	0
Creutzfeldt-Jakob Disease (CJD)	1	1	0
VACCINE PREVENTABLE DISEASES:			
Congenital rubella syndrome	0	0	0
Rubella (German measles)	0	0	0
Rubeola (measles)	0	0	0
Mumps	0	0	0
Pertussis	0	0	0
Tetanus	0	0	0
Varicella	8	27	16
Vaccinia disease	0	1	0
HEPATITIS:			
Hepatitis A	0	1	0
Hepatitis B, acute	1	2	1
Hepatitis B, chronic	3	67	0
Hepatitis B (HBsAg+) in pregnant women	1	5	6
Hepatitis B, perinatal	0	0	0
Hepatitis C, acute	0	0	0
Hepatitis C, chronic	23	191	0
ENTERIC DISEASES:			
Giardiasis	3	12	4
Campylobacteriosis	2	6	10
Shigellosis	0	5	9
Salmonellosis	6	48	30
Cryptosporidiosis	2	6	2
Cyclosporiasis	0	0	3
Typhoid fever	0	0	1
Enterohemorrhagic E. coli (EHEC) O157:H7	0	0	1
E. coli shiga toxin + (serogroup non-O157)	0	0	0
E. coli shiga toxin + (not serogrouped)	0	2	0
Vibrio cholera 01	0	0	0
Vibrio cholera non-01	0	0	0
Vibrio fluvialis	0	0	0
Vibrio alginolyticus	0	0	0
Vibrio hollisae	0	0	0
Vibrio mimicus	0	0	0
Vibrio vulnificus	0	0	0
Vibrio parahaemolyticus	0	0	0
Vibrio, other	0	0	0
OTHER DISEASES:			
Human exposure to a potentially rabid animal	3	11	2
Animal rabies	0	0	0
Monkey bite	0	0	0
Brucellosis	0	0	0
Ciguatera	0	0	0
Dengue fever	0	1	0
Hansen's disease (Leprosy)	0	0	1
Lead poisoning	1	6	2
Legionellosis	0	2	2
Lyme disease	0	1	0
Malaria	0	2	0
Mercury poisoning	0	3	1
Q fever	0	0	0
Rocky mountain spotted fever	0	0	0