

# NURSES' NOTES

Newsletter winter 07/08

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## Happy New Year

Jane Petrofsky RN

### Contents

Welcome Back	1
Food Allergies and School	1
Skin Infections	2
Teenage Brain	3
Head Lice	4

Happy Year! Each school year the nursing staff of the district dives in head first to make certain that your child's health needs are met to assure a healthy, learning environment.

Meeting deadlines for State Immunization Reports, district Vision and Hearing Screenings, along with organizing and scheduling weekly fluoride treatments and free dental care visits from Reach Out Healthcare America are just a few things that need to be addressed immediately at the start of the year. *Scheduling, preparing and teaching "About Better Choices", a puberty-based education class for grades 4-12, as well as specific requested health topic classes for teachers, educating teachers and staff about health care issues, and countless other activities occur year round.* All this in addition to caring for your children who are ill, injured, or may require daily visits to the nurse's office for treatment or medications.

What can you as a parent do to help?

- Supply updated immunization and health records as soon as possible.
- Complete and turn in prescription and over-the-counter medication forms and supply needed medications for your child.
- Consult and inform your school nurse of all your children's health care concerns.

It's only through open and continuous communication with the parents, teachers, and students that we can be successful in meeting your child's needs.

*Here's to a happy, healthy, and successful remaining school year for students, family, and staff!*

## Food Allergies and School

Johnnye Farrell, RN Co-Editor

**11 Million  
Americans suffer  
from food allergies**

An article on food allergies published in the November 5, 2007 issue of Newsweek magazine suggested that we as Americans might have become "over sanitized" resulting in increased levels of food allergies. Today about 11 million Americans suffer from food allergies, and scientists agree the numbers are increasing.

Some of the most common sources are peanuts, shellfish, and eggs. The most significant of these are the peanut allergy, which has doubled between 1997 and 2005.

It is becoming more common to walk into a school or classroom and notice signs posted warning NO Peanuts or Peanut By-Products. Allergists say they are seeing more kids with allergies, and allergies that children eventually outgrow are lingering longer. Your allergy-free child may trigger an allergic reaction in another child by accidentally exposing the allergen to the allergic child.

One theory, dubbed the "hygiene hypothesis", simply says we have become "too clean".

Continued on Page 2



*“Every school is supplied with an Epi-Pen and Albuterol inhaler for sudden attacks”*

The body's immune system is designed to battle foreign invaders like viruses, parasites and infections, but clean water, antibiotics and vaccines have eliminated some of our most toxic challenges.

Nobody knows the exact cause of allergies, but a combination of things such as genes and environment clearly play a role. When an allergy-prone person encounters a substance, the body sees it as trouble and launches an attack by releasing antibodies called immunoglobulin E. These antibodies are attached to the lining of the lungs, intestines, skin, mouth, nose and sinuses. The next time the person is exposed, the cells send out powerful chemicals called histamines which cause the allergic reaction such as wheezing, stomach cramps, itching, stuffiness, swelling and hives. In some cases the response can be sudden and severe causing the airway to shut down and the blood pressure to drop. This can be fatal without immediate treatment, usually with epinephrine.

New research into allergy causes support of the hygiene hypothesis. Studies have shown that children who grow up on farms who are in constant contact with dirt and animals are less likely to develop allergies. A Canadian

study also suggests they are at lower risk for asthma.

Studies are continuing to see if allergies can be eliminated by giving small portions of these substances (allergens) to see if the body will build up a tolerance to it (DON'T TRY THIS AT HOME OR WITHOUT MEDICAL SUPERVISION). Professor Gideon Lack of Kings College, London, has studied the incidence of allergies worldwide and has discovered an interesting paradox: “Countries that have advised avoidance of peanuts in early childhood like the United States showed a greater rise of peanut allergies”.

The Federal Labeling Law authored by US Rep. Nita Lowery requires that ingredients be clearly described for consumers. Providing medical information to the school nurse including health histories, emergency contacts and allergy-emergency plans can help reduced the incident of accident exposure.

District cafeteria food managers are made aware of all students with food allergies via the computer and reinforced by the school nurse. Every school is supplied with an emergency Epi-pen and Albuterol inhaler for sudden attacks. Each school is unique and procedures for handling food allergies are based on meeting the needs of all the students. School nurses are available during school hours for any additional information.

## Emerging Skin Infection May Put Student Athletes at Risk

Joanne Fehling, R.N.  
Jane Petrofsky, RN Editor

MRSA (Methicillin-resistant Staphylococcus Aureus) is an antibiotic-resistant form of a staphylococcus infection. However, a new strain of staph, called CA-MRSA, or community-acquired Methicillin-resistant Staphylococcus Aureus, is much more virulent and spreads more quickly than the old MRSA. Ca-MRSA is especially seen in those that share close quarters or experience more skin contact such as Military recruits, professional athletes, prisoners, and team high school athletes. Students not showering after a sports event and lack

of cleanliness of the equipment can cause outbreaks. How can you tell if you have CA-MRSA? CA-MRSA often appears as a pimple or boil that does not go away on it's own. The skin area can be red, swollen and painful. The area may drain pus or other fluids.

How can your student athlete avoid CA-MRSA?

- Stay healthy.
- Always shower after any physical workout or team practice.
- Employ frequent hand washing.
- Do Not Share personal items such as razors, soap, towels or equipment

- Cover all cuts and wounds.
- Wipe down gym surfaces before use.
- Advocate for cleanliness of all sports equipment including workout clothing and team uniforms.
- Eat healthy and regularly and drink water.

What should you do if you suspect CA-MRSA?

- Show all open, draining and slow healing wounds to the coach or school nurse.
- Contact your doctor immediately.

- Carefully follow your doctor's instructions on how to care for your wound.

What has University City High School done to prevent CA-MRSA?

In collaboration with Ms Kim Loomis, UCHS Athletic Director, the school nurses conducted a team assessment. In addition, the nurses educated the high school athletes regarding infections and healthy living.

Call your school nurse if you have any additional questions and concerns. Additional information is available from WebMD or the CDC.



Always shower after any physical workout or team practice

## Teenage Brain: A Work in Progress

New imaging studies are revealing- for the first time - patterns of brain development that extend into the teenage years. Although scientists don't know yet what accounts for the observed changes, they may parallel a pruning process that occurs early in life that appears to follow the principle of "use-it-or-lose-it": neural connections or synapses that get exercised are retained, while those that don't are lost. At least, this is what studies of animals' developing visual systems suggest. While it's known that both genes and environment play major roles in shaping early brain development, science still has much to learn about the relative influence of experience versus genes on the later maturation of the brain. Animal studies support a role for experience in late development, but no animal species undergoes anything comparable to humans' protracted childhood and adolescence. Nor is it yet clear whether experience actually creates new neurons and synapses, or merely established transitory functional changes. Nonetheless, it's tempting to interpret the new findings as empowering teens to protect and nurture their brains as a work in progress.

The newfound appreciation of the

dynamic nature of the teen brain is emerging from MRI (magnetic resonance imaging) studies that scan a child's brain every two years as he or she grows up. Individual brains differ enough that only broad generalization can be made from comparisons of different individuals at different ages. But following the same brains as they mature allows scientists a much finer-grained view into developmental changes. In the first such longitudinal study of 145 children and adolescents, reported in 1999, NIMH's Dr. Judith Rapoport and colleagues were surprised to discover a second wave of overproduction of gray matter, the thinking part of the brain - neurons and their branch-like extensions - just prior to puberty. Possibly related to the influence of surging sex hormones, these thickening peaks at around age 11 in girls, 12 in boys, after which the gray matter actually thins some.

Prior to the study, research had shown that the brain overproduced gray matter for a brief period in early development- in the womb and for about the first 18 months of life- and then underwent just one bout of pruning.



Continued Page 4

Researchers are now confronted with structural changes that occur much later in adolescence. The teen's gray matter waxes and wanes in different functional brain areas at different times in development. For example, the gray matter growth spurt just prior to puberty predominates in the frontal lobe, the seat of "executive functions" - planning, impulse control and reasoning. In teens affected by a rare, childhood onset form of schizophrenia that impairs these functions, the MRI scans revealed four times as much gray matter loss in the frontal lobes as normally occurs.

Unlike gray matter, the brain's white matter, wire-like fibers that establish the neuron's long-distance connections between brain regions, thickens progressively from birth in humans. A layer of insulation called myelin progressively envelops these nerve fibers, making them more efficient, just like insulation on electric wires improves their conductivity. Advancements in MRI image analysis are providing new insights into how the brain develops. UCLA's Dr. Arthur Toga and colleagues turned the NIMH team's MRI scan data into 4-D time-lapse animations of children's brains morphing as they regroup, the 4th dimension being rate-of-change. Researchers report a wave of white matter growth that begins at the front of the brain in early childhood, moves rearward, and then subsides after puberty. Striking growth spurts can be seen from ages 6 to 13 in areas connecting the brain regions specialized for language and understanding spatial relations, the temporal and parietal lobes. This growth drops off sharply after age 12, coinciding with the end of a critical period for learning languages.

While this work suggests a wave of brain white matter development that flows from front to back, animal, functional brain imaging, and postmortem studies have suggested that gray matter maturation flows in the opposite direction with the frontal lobes not fully maturing until young adulthood. To confirm

this in living humans, the UCLA researchers compared MRI scans of young adults, 23-30, with those of teens, 12-16. They looked for signs of myelin, which would imply more mature, efficient connections, within gray matter. As expected, areas of the frontal lobe showed the largest differences between young adults and teens. This increased myelination in the adult frontal cortex likely relates to the maturation of cognitive processing and other "executive" functions. Parietal and temporal areas mediating spatial, sensory, and auditory and language functions appeared largely mature in the teen brain. The observed late maturation of the frontal lobe conspicuously coincides with the typical age-of-onset of schizophrenia, late teens, early twenties, which, as noted earlier, is characterized by impaired "executive" functioning.

Another series of MRI studies is shedding light on how teens may process emotions differently than adults. Using functional MRI (fMRI), a team lead by Dr. Deborah Yurgelun-Todd at Harvard's McLean Hospital scanned subjects' brain activity while they identified emotions on pictures of faces displayed on a computer screen. Young teens, who characteristically perform poorly on the task, activated the amygdala, a brain center that mediated fear and other "gut" reactions, more than the frontal lobe. As teens grow older, their brain activity during this task tends to shift to the frontal lobe, leading to more reasoned perceptions and improved performance. Similarly, the researchers saw shift in activation from the temporal lobe to the frontal lobe during a language skills task as teens got older. These functional changes paralleled structural changes in temporal white matter.

While these studies have shown remarkable changes that occur in the brain during the teen years, they also demonstrate what every parent can confirm:

*The teenage brain is a very complicated and dynamic arena, one that is not easily understood.*

Child and adolescent mental health information:

<http://www.nimh.nih.gov/publicat/childmenu.cfm>

A publication by the National Institute of Mental Health

*References available on request.*

## "Mommy, My Head Itches"

Pat Wilson, RN

Unwelcome guests who bring friends can be a nuisance. They come looking for food and a warm place to stay. There are a few things that a classroom can do to prevent those irritating visitors from following us home (you guessed right, Head Lice).

- Avoid using the floor as a place to store coats. Coats piled in a corner encourage unwelcome guests. Keep coats off the floor on a hook or in an assigned locker.
- Store gloves and hats in backpack or coat sleeves.
- Avoid storing head gear, gloves and scarves on the community shelf.
- Avoid community hats, gloves and scarves unless you plan on washing after every use.
- Cover hanging coats in a large plastic bag (trash bag or dry cleaner's bag is workable and available).
- Remind students not to share combs, brushes and personal items.

If an unwelcome guest visits your home, get rid of it with an over-the-counter lice shampoo before returning to school. We all know this is a common community concern. We all agree; this unwelcome guest can find another place to lay its head.