

LIFELINE

St. Jude for Life



Spring 2012

Research News

Recently published results from the neuro-cognitive research team:

Clanton et al. Fatigue, vitality, sleep and neurocognitive functioning in adult survivors of childhood cancer: A Report from the Childhood Cancer Survivor Study. *Cancer*. 2011 April 11 [Epub].

This study showed that poor sleep quality can increase difficulties with thinking and learning that may be related to cancer therapy.

Krull et al. Neurocognitive functioning, health behaviors and health care utilization in adult survivors of childhood cancer: A report from the Childhood Cancer Survivor Study. *European Journal of Cancer*. 2011; 47(9):1380-8.

Found that cognitive difficulties experienced by survivors may lead to reduced participation in recommended health screening.

Stuber ML, et al. Defining medical posttraumatic stress among young adult survivors in the Childhood Cancer Survivor Study. *General Hospital Psychiatry*. 2011; 33(4):347-53.

Showed that survivors can develop post-traumatic stress many years after their cancer experience.

Kunin-Batson et al. Predictors of independent living status in adult survivors of childhood cancer: A report from the Childhood Cancer Survivor Study. *Pediatric Blood & Cancer*. 2011; 57(7): 1197-203.

Found that survivors are less likely to live independently as adults, especially if they have developed cognitive problems.

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Dear St. Jude Alumni,



As you know, the St. Jude Life Study is in the process of inviting more than 4,000 alumni cancer survivors who were treated at St. Jude to return for on-campus, clinical evaluations. The study recently passed a major milestone. In December, our 2000th alumna returned to St. Jude and completed the study assessment. Amanda Saxton, of Traverse City, Michigan, was successfully treated for Wilms tumor in 1984 at age 5. Amanda is now 33 years old and the mother of a six-year-old daughter. She was surprised at how much St. Jude has changed over the years.

“Change does not even describe it!” she says. “It is a completely different place structurally, but emotionally, it’s still the same place. The feeling of hope has not been altered. I am amazed and in awe of the hospital. I could still see some of the same structures, but when I started my treatment in 1984, it was just a small place. I love what it has become.”

Amanda also appreciated the opportunity to participate in research. As she says, “It was hard for me to be there as a mom, but I truly feel I was there to help.”

Read on to learn more about Amanda and her experiences returning to St. Jude.



Amanda Saxton with Dr. Tim Folse, going over results of the St. Jude Life study evaluation

Children who received neurotoxic therapies for childhood cancer are at risk of developing problems with memory, learning, behavior, and the ability to master the skills needed for day-to-day living. Neurotoxic therapies are treatments (such as radiation to the brain) that can damage the brain, spinal cord, or other nerve tissue. St. Jude Life study participants who received these types of treatments are seen by our neuropsychology research team. We feature the work of these investigators in this research update. Please see the next page for details.

As always, thank you, alumni, for partnering with us in this vital effort!

Melissa M. Hudson, MD

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Principal Investigator, St. Jude Lifetime Cohort Study

Neurocognitive Research - Shedding Light on Brain Function

The St. Jude neuropsychology team is about to publish a brand new finding that concerns long-term survivors of Hodgkin lymphoma. Some of these individuals, who were treated with radiation to the chest area, develop mild-to-moderate heart and/or lung problems. And, some of them have an increased risk for problems with thinking and memory, even though they didn't receive treatments that affect the brain.

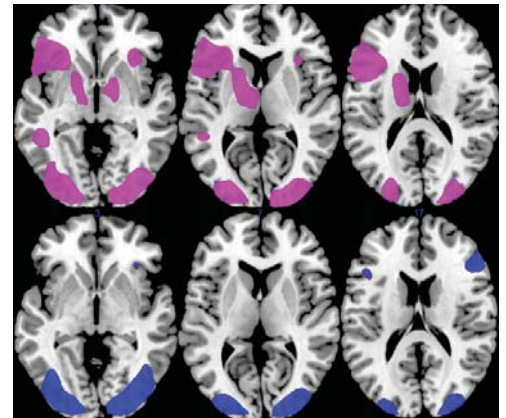
The neurocognitive difficulties these individuals experience may be related to problems with blood flow in small vessels deep in the brain. These problems can be detected by brain imaging tests. The neurocognitive problems and the brain imaging findings are associated with reduced heart and lung function. For affected individuals, problems with memory and thinking seem to develop over time. They may interfere with a person's ability to complete a college education or hold a full-time job.

This study was led by Kevin Krull, PhD. Dr. Krull is a neuropsychologist and a member of the St. Jude Life study team. He says the neurocognitive problems these survivors are experiencing are not the result of treatments that directly affect the brain. "They are an indirect effect of treatment on heart and lung function which, over time, has an impact on brain function," he notes.

"We will be following up these findings to learn whether a similar risk exists for people who were treated with chemotherapy like doxorubicin (Adriamycin) or bleomycin. Doxorubicin can cause problems with heart health and bleomycin can damage the lungs. We will also be looking at ways to promote heart and lung health to see if healthy habits can decrease the risk of neurocognitive problems, as well."

Picturing the brain. St. Jude researchers are using functional MRI (fMRI) technology to study brain function in survivors of childhood cancers. fMRI is a non-invasive, low-risk procedure. It maps blood flow in the brain that is associated with brain activity.

fMRI produces images of the brain that show which areas are activated when a person is shown pictures or words, or similar things that can produce responses in the brain. fMRI can help identify areas of the brain that are not working normally after therapy for brain cancer or acute lymphoblastic leukemia (ALL). This information can help doctors understand and predict the types of neurocognitive problems that are likely to occur after therapy. fMRI can also help doctors find out if treatments aimed at improving cognitive function are working.



On a functional MRI scan, brain activity shows different patterns remembering words (top) compared to faces (bottom).

St. Jude Life Study Enrolls 2000th Participant!

When Amanda Saxton was treated as a child for Wilms tumor (a type of kidney cancer) her parents took turns accompanying the 5-year-old on visits to St. Jude. Today, Amanda is married and the mother of a little girl named Chloe Rose. Even so, she chose to come alone when she returned to St. Jude in December, 2011, to participate in the St. Jude Life study. Amanda, the 2000th



Amanda, with Dr. Folse and Dr. Hudson, holds the gift certificate she received for being the 2000th study participant.

participant enrolled in the study, says, "I wanted to make this a personal experience. My daughter is still too young to understand the evil nature of cancer. I also wanted to take the opportunity to meet families that were either part of the study or undergoing treatment now."

When she married her husband Jamie, Amanda was worried that they might not be able to start a family because of the cancer treatments she had received. However, after losing two pregnancies, they were thrilled when Chloe was born, 13 weeks prematurely and weighing just 2 pounds, 5 ounces. Being a parent, Amanda says, helps keep everything in life in perspective.

It's also enhanced her enthusiasm for participating in research. When asked what she considers the most valuable part of her participation in the St. Jude Life study, she responds, "The chance to help those kids! I

loved seeing the kids. St. Jude saved my life—there's no doubt about that. I just want to help in any way I can to give other children the same chance."

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