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It's a Kid's Job Playing Helps Kids Learn and Grow

What would childhood be without time to play? Play, it turns out, is essential to growing up healthy. Research shows that active, creative play benefits just about every aspect of child development.

"Play is behavior that looks as if it has no purpose," says NIH psychologist Dr. Stephen Suomi. "It looks like fun, but it actually prepares for a complex social world." Evidence suggests that play can help boost brain function, increase fitness, improve coordination and teach cooperation.

Suomi notes that all mammals—from mice to humans—engage in some sort of play. His research focuses on rhesus monkeys. While he's cautious about drawing parallels between monkeys and people, his studies offer some general insights into the benefits of play.

Active, vigorous social play during development helps to sculpt the monkey brain. The brain grows larger. Connections between brain areas may strengthen. Play also helps monkey youngsters learn how to fit into their social group, which may range from 30 to 200 monkeys in 3 or 4 extended families.

Both monkeys and humans live in highly complex social structures, says Suomi. "Through play, rhesus monkeys learn to negotiate, to deal with strangers, to lose gracefully, to stop before things get out of hand, and to follow rules," he says. These lessons prepare monkey youngsters for life after they leave their mothers.



Play may have similar effects in the human brain. Play can help lay a foundation for learning the skills we need for social interactions. If human youngsters lack playtime, says Dr. Roberta Golinkoff, an infant language expert at the University of Delaware, "social skills will likely suffer. You will lack the ability to inhibit impulses, to switch tasks easily and to play on your own." Play helps young children master their emotions and make their own decisions. It also teaches flexibility, motivation and confidence.

Kids don't need expensive toys to get a lot out of playtime. "Parents are children's most enriching plaything," says Golinkoff. Playing and talking to babies and children are vital for their language development. Golinkoff

says that kids who talk with their parents tend to acquire a vocabulary that will later help them in school. "In those with parents who make a lot of demands, language is less well developed," she says. The key is not to take over the conversation, or you'll shut it down.

Unstructured, creative, physical play lets children burn calories and develops all kinds of strengths, such as learning how the world works. In

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free play, children choose the games, make the rules, learn to negotiate and release stress. Free play often involves fantasy. If children, say, want to learn about being a fireman, they can imagine and act out what a fireman does. And if something scary happens, free play can help defuse emotions by working them out.

"Sports are a kind of play, but it's not the kids calling the shots," says Golinkoff. It's important to engage in a variety of activities, including physical play, social play and solitary play. "The key is that in free play, kids are making the decisions," says Golinkoff. You can't learn to make decisions if you're always told what to do.

Some experts fear that free play is becoming endangered. In the last 2 decades, children have lost an average of 8 hours of free play per week.



Wise Choices Play To Learn and Grow

- Kids don't need expensive toys and games to engage in enriching play.
- Let children lead.
- Monitor screen time (computer, TV, video games). Encourage more active play.
- Get involved with your community to make playtime and play space available for all children.

As media screens draw kids indoors, hours of sitting raise the risk for obesity and related diseases. When it comes to video games and other media, parents should monitor content, especially violent content, and limit the amount of time children sit.

There's also been a national trend toward eliminating school recess. It's being pushed aside for academic study, including standardized test preparation. "Thousands of children have lost recess altogether," says child development expert Dr. Kathryn Hirsh-Pasek of Temple University. "Lack of recess has important consequences for young children who concentrate better when they come inside after a break from the schoolwork."

Many kids, especially those in low-income areas, lack access to safe places to play. This makes their school recess time even more precious. In response to these changes, some educators are now insisting that preschool and elementary school children have regular periods of active, free play with other children. The type of learning that happens during playtime is not always possible in the classroom. School recess is also important because of the growing number of obese children in the United States. Running around during recess can help kids stay at a healthy weight.

Play also may offer advantages within the classroom. In an NIH-funded study, Hirsh-Pasek, Golinkoff and their colleagues found a link between preschoolers' math skills and their ability to copy models of



Web Links

For more information about play and activity, see our links online:
<http://newsinhealth.nih.gov/issue/Jun2012/Feature1>

2- and 3-dimensional building-block constructions. Play with building blocks—and block play alongside adults—can help build children's spatial skills so they can get an early start toward the later study of science, technology, engineering or math.

"In a way, a child is becoming a young scientist, checking out how the world works," says Hirsh-Pasek. "We never outgrow our need to play." Older children, including teens, also need to play and daydream, which helps their problem-solving and creative imagination. Adults, too, need their breaks, physical activity and social interaction.

At the NIH Clinical Center in Bethesda, Maryland, "Recreation therapy services are seen as essential to the patients' recovery," says Donna Gregory, chief of recreational therapy. She and her team tailor activities for both children and adults. Games can get patients moving, even for just minutes at a time, which improves their functioning.

Medical play helps children cope with invasive procedures. A 2-year-old can be distracted with blowing bubbles; older kids can place their teddy bear in the MRI machine or give their doll a shot before they themselves get an injection. It gives kids a sense of control and supports their understanding in an age-appropriate, meaningful way.

Without play and recreation, people can become isolated and depressed. "There's therapeutic value in helping patients maintain what's important to them," says Gregory. "When you are physically and socially active, it gives life meaning." ■

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Catching a Cold When It's Warm

What's the Deal with Summertime Sniffles?

Most everyone looks forward to summer—time to get away, get outside and have some fun. So what could be more unfair than catching a cold when it's warm? How can cold symptoms arise when it's not cold and flu season? Is there any way to dodge the summertime sniffles?

Cold symptoms can be caused by more than 200 different viruses. Each can bring the sneezing, scratchy throat and runny nose that can be the first signs of a cold. The colds we catch in winter are usually triggered by the most common viral infections in humans, a group of germs called rhinoviruses. Rhinoviruses and a few other cold-causing viruses seem to survive best in cooler weather. Their numbers surge in September and begin to dwindle in May.

During summer months, the viral landscape begins to shift. "Generally speaking, summer and winter colds are caused by different viruses," says Dr. Michael Pichichero, a pediatrician and infectious disease researcher at the Rochester General Hospital Research Institute in New York. "When you talk about summer colds, you're probably talking about a non-polio enterovirus infection."

Enteroviruses can infect the tissues in your nose and throat, eyes, digestive system and elsewhere. A few enteroviruses can cause polio, but vaccines have mostly eliminated these viruses from Western countries. Far more widespread are more than 60 types of non-polio enteroviruses. They're the second most common type of virus—after rhinovirus—that infects humans. About half of people with enterovirus infections don't get sick at all. But nationwide, enteroviruses cause an estimated 10 million to 15 million illnesses each year, usually between June and October.

Enteroviruses can cause a fever that comes on suddenly. Body temperatures may range from 101 to 104 °F. Enteroviruses can also cause mild respiratory symptoms, sore throat, headache, muscle aches and gastrointestinal issues like nausea or vomiting.

"All age groups can be affected, but like most viral infections, enterovirus infections predominate in childhood," says Pichichero. Adults may be protected from enterovirus infections if they've developed **antibodies** from previous exposures. But adults can still get sick if they encounter a new type of enterovirus.

Less common enteroviruses can cause other symptoms. Some can lead to conjunctivitis, or pinkeye—a swelling of the outer layer of the eye and eyelid. Others can cause an illness with rash. In rare cases, enteroviruses can affect the heart or brain.

To prevent enterovirus infections, says Pichichero, "it's all about block-



ing viral transmission." The viruses travel in respiratory secretions, like saliva or mucus, or in the stool of an infected person. You can become infected by direct contact. Or you might pick up the virus by touching contaminated surfaces or objects, such as a telephone, doorknob or baby's diaper. "Frequent hand washing and avoiding exposure to people who are sick with fever can help prevent the spread of infection," says Pichichero.

The summer colds caused by enteroviruses generally clear up without treatment within a few days or even a week. But see a health care provider if you have concerning symptoms, like a high fever or a rash. ■



Wise Choices Treating a Cold

There's no cure for a cold, but you can relieve symptoms by:

- resting in bed.
- drinking plenty of fluids.
- taking acetaminophen—Tylenol, for example—for headache or fever.
- gargling with warm salt water or using ice chips, throat sprays or lozenges for a sore throat.
- using a decongestant or saline nasal spray for nasal symptoms.



Definitions

Antibodies

Germ-fighting molecules made by the immune system.



Web Links

For more information about colds and enterovirus, see our links online:
<http://newsinhealth.nih.gov/issue/Jun2012/Feature2>

Health Capsules

For links to more information, see these stories online:
<http://newsinhealth.nih.gov/issue/Jun2012/Capsule1>

Skip the Test Before Incontinence Surgery?

Women may be able to skip a routine bladder function test before urinary incontinence surgery. A new study shows that outcomes were similar whether patients had the test or just a check-up before the surgery.

Urinary incontinence is a loss of bladder control. It affects nearly 13 million Americans. It's caused by problems with the muscles and nerves involved in holding and releasing urine. Stress urinary incontinence occurs when urine leaks following coughing, laughing, sneezing, exercising or other movements that

put pressure on the bladder.

Pregnancy, childbirth and menopause can often lead to stress incontinence. Each year about 260,000 women choose to have surgery to treat this condition. Before surgery, tests called urodynamic studies are used to measure how well the bladder, sphincter muscles and urethra are storing and releasing urine. These bladder function tests might cause discomfort or pain, and can be costly.

NIH-funded researchers studied over 600 women with stress urinary incontinence. Before surgery, all of

the women had a routine check-up. Half also had a bladder function test.

A year after surgery, several measures showed that about 77% of women in both groups had achieved treatment success.

"The findings of our study argue against routine pre-operative testing in cases of uncomplicated stress urinary incontinence, as the tests provide no added benefit for surgical treatment success but are expensive, uncomfortable and may result in complications such as urinary tract infections," says the study's lead author, Dr. Charles Nager of the University of California, San Diego. ■

Bilingual Effects in the Brain

Scientists found that certain brain functions are enhanced in teens fluent in more than one language. The study gives clues to the interplay between our brains and senses.

About 1 in 5 children nationwide speaks a language other than English at home. Studies have found that children who speak 2 languages (bilingual) tend to be better than monolingual children at multitasking. They are also better at focusing their attention—for example, homing in on a voice in a noisy cafeteria.

To learn more, scientists at Northwestern University studied 48 high school students. All were skilled speakers of English; about half were also Spanish speakers.

The teens listened to speech syllables while scientists measured activity in specific brain circuits that process complex sounds. Bilinguals showed a stronger response than

monolinguals. When the sound was played with a background of babble, bilinguals continued to have a strong response, but the response fell for monolingual teens.

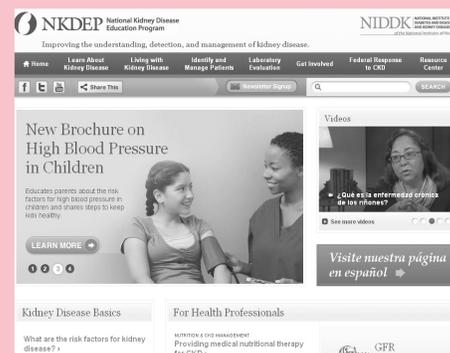
Bilingual teens also outperformed monolingual teens on a test of selective attention, in which they were asked to repeatedly click a mouse when a 1, but not a 2, was seen or heard. Among bilingual teens, scores on this test matched up with the intensity of their brain circuit responses to the babble test.

"Bilingualism serves as enrichment for the brain and has real consequences when it comes to executive function, specifically attention and working memory," says Dr. Nina Kraus, lead researcher of the study. In future efforts, the team plans to explore whether similar benefits can be achieved by learning a language later in life. ■

Featured Website National Kidney Disease Education Program

<http://nkdep.nih.gov>

Questions about kidney disease? This newly revamped site has updated information for people at risk or diagnosed with kidney disease. Free materials and resources will also be useful to health care professionals and communities.



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