

NIH News in Health

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Positive Parenting Building Healthy Relationships With Your Kids

Parents have an important job. Raising kids is both rewarding and challenging. You're likely to get a lot of advice along the way, from doctors, family, friends, and even strangers. But every parent and child is unique. Being sensitive and responsive to your kids can help you build positive, healthy relationships together.

“Being a sensitive parent and responding to your kids cuts across all areas of parenting,” says Arizona State University’s Dr. Keith Crnic, a parent-child relationship expert. “What it means is recognizing what your child needs in the moment and providing that in an effective way.”

This can be especially critical for infants and toddlers, he adds. Strong emotional bonds often develop through sensitive, responsive, and consistent parenting in the first years of life. For instance, holding your baby lovingly and responding to their cries helps build strong bonds.

Building Bonds

Strong emotional bonds help children learn how to manage their own feelings and behaviors and develop self-confidence. They help create a safe base from which they can explore, learn, and relate to others.

Experts call this type of strong connection between children and their caregivers “secure attachment.” Securely attached children are more likely to be able to cope with challenges like poverty, family instability, parental stress, and depression.



A recent analysis shows that about 6 out of 10 children in the U.S. develop secure attachments to their parents. The 4 out of 10 kids who lack such bonds may avoid their parents when they are upset or resist their parents if they cause them more distress. Studies suggest that this can make kids more prone to serious behavior problems. Researchers have been testing programs to help parents develop behaviors that encourage secure attachment.

Being Available

Modern life is full of things that can influence your ability to be sensitive and responsive to your child. These include competing priorities, extra work, lack of sleep, and things like mobile devices. Some experts are concerned about the effects that distracted parenting may have on emotional bonding and children’s



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language development, social interaction, and safety.

If parents are inconsistently available, kids can get distressed and feel hurt, rejected, or ignored. They may have more emotional outbursts and feel alone. They may even stop

If parents are inconsistently available, kids can get distressed and feel hurt, rejected, or ignored.

trying to compete for their parents' attention and start to lose emotional connections to their parents.

"There are times when kids really do need your attention and want your recognition," Crnic explains. Parents need to communicate that their kids are valuable and important, and children need to know that parents care what they're doing, he says.

It can be tough to respond with sensitivity during tantrums, arguments, or other challenging

times with your kids. "If parents respond by being irritable or aggressive themselves, children can mimic that behavior, and a negative cycle then continues to escalate," explains Dr. Carol Metzler, who studies parenting at the Oregon Research Institute.

According to Crnic, kids start to regulate their own emotions and behavior around age 3. Up until then, they depend more on you to help them regulate their emotions, whether to calm them or help get them excited. "They're watching you to see how you do it and listening

Make some time to spend with your child that isn't highly directive, where your child leads the play.

to how you talk to them about it," he explains. "Parents need to be good self-regulators. You're not only trying to regulate your own emotions in the moment, but helping your child learn to manage their emotions and behavior."

As kids become better at managing their feelings and behavior, it's important to help them develop coping skills, like active problem solving. Such skills can help them feel confident in handling what comes their way.

"When parents engage positively with their children, teaching them the behaviors and skills that they need to cope with the world, children learn to follow rules and regulate their own feelings," Metzler says.

"As parents, we try really hard to protect our kids from the experience of bad things," Crnic explains. "But if you protect them all the time and they are not in situations where they deal with difficult or adverse circumstances, they aren't able to develop healthy coping skills."

He encourages you to allow your kids to have more of those experiences and then help them

learn how to solve the problems that emerge. Talk through the situation and their feelings. Then work with them to find solutions to put into practice.

Meeting Needs

As children grow up, it's important to remember that giving them what they need doesn't mean giving them everything they want. "These two things are very different," Crnic explains. "Really hone in on exactly what's going on with your kid in the moment. This is an incredibly important parenting skill and it's linked to so many great outcomes for kids."

Think about where a child is in life and what skills they need to learn at that time. Perhaps they need help managing emotions, learning how to behave in a certain situation, thinking through a new task, or relating to friends.

"You want to help kids become confident," Crnic says. "You don't want to aim too high where they can't get there or too low where they have already mastered the skill." Another way to boost confidence while strengthening your relationship is to let your kid take the lead.

"Make some time to spend with your child that isn't highly directive, where your child leads the play," advises Dr. John Bates, who studies children's behavior problems at Indiana University Bloomington. "Kids come to expect it and they love it, and it really improves the relationship."

Bates also encourages parents to focus on their child's actual needs instead of sticking to any specific parenting principles.

It's never too late to start building a healthier, more positive relationship with your child, even if things have gotten strained and stressful. "Most importantly, make sure that your child knows that you love them and are on their side," Metzler says. "For older children,

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let them know that you are genuinely committed to building a stronger relationship with them and helping them be successful.”

By being a sensitive and responsive parent, you can help set your kids on a positive path, teach them self-control, reduce the likelihood of troublesome behaviors, and build a warm, caring parent-child relationship. ■



Wise Choices

Tips for Connecting with Your Kids

- Catch kids showing good behavior and offer specific praise.
- Give children meaningful jobs at home and positive recognition afterward. Don't be overly critical; instead, help them improve their skills one step at a time.
- Use kind words, tones, and gestures when giving instructions or making requests.
- Spend some time every day in warm, positive, loving interaction with your kids. Look for opportunities to spend time as a family, like taking after-dinner walks or reading books together.
- Brainstorm solutions to problems at home or school together.
- Set rules for yourself for mobile device use and other distractions. For instance, check your phone after your child goes to bed.
- Ask about your child's concerns, worries, goals, and ideas.
- Participate in activities that your child enjoys. Help out with and attend their events, games, activities, and performances.

Shape Your Family's Habits

Helping Kids Make Healthy Choices

Many things can influence a child, including friends, teachers, and the things they see when they sit in front of the TV or computer. If you're a parent, know that your everyday behavior plays a big part in shaping your child's behavior, too. With your help, kids can learn to develop healthy eating and physical activity habits that last throughout their lives.

Healthy eating and physical activity are essential for children of any age. “They can have many health benefits for children, including promoting heart health and improving mood,” says Dr. Voula Osganian, a child obesity specialist at NIH.

Getting active and eating right may also prevent excess weight and childhood obesity, a growing concern in this country. Today, nearly 1 in 3 children in the United States is overweight or obese. “If someone develops obesity as a child or adolescent, there's a very high likelihood that they'll remain obese or overweight as an adult,” Osganian explains. “But studies also show that if you start eating healthy and being active early, you tend to maintain those habits over time.”

Although most of us know that it's a good idea to eat healthy food and move more, it isn't always easy to do. Children aren't likely to change their diet and activity habits on their own. It's up to you to make it easier for your family to make healthy choices.

“Parents are very important in terms of arranging an environment and setting a model for healthy or unhealthy behavior,” says Dr. Leonard H. Epstein, an expert on childhood obesity at the University of Buffalo. “Parents



bring foods into the house. They control how much time a child can watch TV. They control what kinds of social activities are paired with foods. And kids learn a huge amount about eating and physical activity from watching and imitating their parents.”

Epstein's research shows how important parents can be. In NIH-funded work, his team assigned obese children, ages 8 to 12, to different types of weight loss programs. All the groups were taught about healthy diet, behaviors, and exercise. For some groups, positive feedback and encouragement for weight loss and behavior changes were given only to the child. Other groups focused on both the child and an obese parent. Comparison groups received little feedback.

The researchers found that when obese parents and children worked together, both were more successful at losing weight and making healthy changes. “Our studies suggest that getting the whole family working together really benefits the child,” Epstein says. “Even after 10 years, when these kids were 18 to 22



Web Links

For more about positive parenting, go to: newsinhealth.nih.gov/special-issues/parenting/positive-parenting

years old, the ones who had the parent working with them had lost more weight and maintained more weight loss than the ones treated by themselves, and obviously more than the comparison groups.”

Over time, most parents gradually began to regain their lost weight, the researchers found. But after 10 years, more than 40% of the kids who worked with their parents had maintained a weight reduction of at least 20%. “The finding suggests that even if the parents go back to their old behaviors, many of the kids will not,” says Epstein.

While it’s never too late to start making healthy changes in your family, research suggests that the earlier your kids learn healthy behaviors, the better.



Wise Choices Help Kids Form Healthy Habits

- Be a role model. Eat healthy family meals together. Walk or ride bikes instead of watching TV or surfing the Web.
- Make healthy choices easy. Put nutritious food where it’s easy to see. Keep balls and other sports gear handy.
- Focus on fun. Play in the park, or walk through the zoo or on a nature trail. Cook a healthy meal together.
- Limit screen time. Don’t put a TV in your child’s bedroom. Avoid snacks and meals in front of the TV.
- Check with caregivers or schools. Make sure they offer healthy foods, active playtime, and limited TV or video games.
- Change a little at a time. If you drink whole milk, switch to 2% milk for a while, then try even lower fat milks. If you drive everywhere, try walking to a nearby friend’s house, then later try walking a little farther.

Dr. Julie Lumeng, a pediatrician at the University of Michigan, focuses her NIH-funded research on the factors that affect eating behaviors in young children—especially preschoolers and infants. That’s an ideal time to start exposing your children to a variety of healthy foods, such as fruits and vegetables, so they develop a liking for them.

Getting young ones to accept fruits and vegetables can be a challenge, but some parents give up too quickly if a child rejects a new food. Research suggests that the more times you offer a food, the more likely a child will be to warm up to it. “Kids typically have to taste a new food 9 to 15 times to begin to like it,” Lumeng says.

If your child doesn’t like a new food right away, stay positive and keep trying over time. Encouraging kids to take just one bite of a new food can help. But avoid creating conflicts and stress over it. “Trying a new food can be exciting and also stressful in general,” Lumeng says. “Several studies show that kids are more likely to try a new food if they’re eating in a setting that’s relaxing and pleasant.”

Children under the age of three tend to stop eating on their own when they’re full. “But after age three,” Lumeng says, “the more you put on their plate, the more they’ll eat.” So make sure to give your kids child-size portions.

Take opportunities to teach young children about feelings of fullness. “If your child asks for another helping, instead of saying, ‘No, honey, you’ve had enough,’ try saying something like, ‘You must really be hungry tonight,’ to raise their awareness of their feelings,” Lumeng suggests. “Or when they stop eating, say, ‘Oh, you must feel full now,’ to help teach about hunger and feeling satisfied.”

Several studies show that parents can effectively influence healthy behaviors by talking in a positive way or avoiding certain situations

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altogether. “Instead of telling your children, ‘No, you can’t have any more cookies,’ just keep cookies out of the house altogether,” says Lumeng.

When you bring unhealthy food and sugary drinks into the house, “parents essentially become the food police,” adds Epstein. “It’s easier to create an environment in the home where there’s limited access to unhealthy foods and lots of access to healthy foods.”

Experts recommend that most kids get at least an hour of moderate to vigorous physical activity each day. Parents can help by limiting TV and computer time to no more than one or two hours per day.

“Small changes in the home environment can also have a huge effect on physical activity,” says Epstein. You can make sports equipment like balls and jump ropes more accessible by putting them next to the door. Walking fast, bicycling, jumping rope, and playing basketball, soccer, or hopscotch are all good ways for kids to be active.

When it comes to food and physical activity, what you say and do around your children can have a lasting effect. Work together as a family to make healthy habits easy and fun. ■



Web Links

For more about healthy eating and physical activity, go to:
newsinhealth.nih.gov/special-issues/parenting/shape-your-familys-habits

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 can help lay a foundation for learning the skills we need for social interactions.

“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 [kids] 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, Suomi says. “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. Let kids guide the conversation. When you take over the conversation, you may shut it down.

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

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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,” Golinkoff says, “but it's not the kids

See, Hear, Speak

Are Kids' Senses Ready for School?

When setting off for kindergarten or first grade, a child may feel prepared with a backpack loaded with crayons, pencils, and paper. But a good start in the classroom depends on more than just school supplies. Healthy hearing, vision, speech, and language are key to success at school. If a child has problems in these areas, the sooner they're spotted, the better they can be treated.

A good start in the classroom depends on more than just school supplies. Healthy hearing, vision, speech, and language are key to success at school.

Sometimes problems with senses, speech, or language fly under the radar. A child with a lazy eye or a little hearing loss might get along just fine at home or in daycare. But when children get to school, minor difficulties may start to catch up with them. They may have trouble focusing and flourishing in the classroom. NIH-funded scientists are searching for better ways to recognize and treat these types of problems as early as possible.

Nearly all newborns are screened for hearing loss before leaving the hospital. For newborns diagnosed with hearing loss, interventions such as hearing aids or cochlear implants should begin no later than 6 months of age. When interventions begin early, children with hearing loss can develop language skills that help them communicate.

Hearing problems can also arise in older kids. "Some children are born with normal hearing and develop hearing loss later for various reasons," says Dr. Mary Pat Moeller, who studies childhood deafness

and language development at Boys Town National Research Hospital in Nebraska. Head injuries, meningitis, and chronic fluid behind the eardrum from repeated bouts of ear infections are just a few conditions that can lead to later hearing loss.

"We rely on normal hearing to pick up concepts and learn new words," Moeller says. But a noisy classroom can be tough for kids who can't hear well. "Children with undetected hearing loss may look like they have attention deficits. They may miss what they've been told because they're just not hearing clearly," she says.

Screening for hearing loss in school-age kids is a familiar process. Children wear headphones and raise their hands as they hear a series of tones. Some 5% to 10% of school-age children don't pass these tests. Kids with hearing loss can be fitted with hearing aids or benefit from cochlear implants or assistive devices. For example, teachers can wear microphones that send their voices directly to the children's ears. Even children with minimal hearing loss can benefit from this type of technology.

Children learn language by listening to others and engaging in conversations. But kids with hearing loss can miss out on some of this experience. Moeller and her colleagues are studying how children with hearing loss develop language. Results from this NIH-funded research point to several factors that can help. These include the quality and fit of hearing aids, how often kids get speech and language training, and how often parents have conversations with their children.

A different source of language problems is a disorder called



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specific language impairment, or developmental language disorder. This condition affects an estimated 7% of children in kindergarten. Kids with specific language impairment have trouble learning new words and engaging in conversation. They might produce grammatically incorrect sentences like "What he want for dinner?" or they might have a small vocabulary.

"Both of those are fundamental to being able to communicate with the teacher, to understanding what the teacher is saying to them, and to forming social relationships with their peers," says Dr. Mabel Rice, an NIH-funded researcher who studies

childhood language disorders at the University of Kansas.

For example, a child with specific language impairment might not un-

Vision problems are common in preschoolers, but kids don't always tell others about their symptoms.

derstand that “It’s time to put your things away now” means “Put your things away.” Children who don’t understand complicated sentences can seem like they’re disobedient, Rice says. More complicated grammar is also good for making friends. Saying “I would like it if you’d come play with me” might attract more playmates than “Come over here.”



Wise Choices Signs of Eye, Ear, or Language Problems

Talk with a health care provider if your child:

- doesn't respond consistently to sounds or to his or her name.
- asks for things to be repeated or says “huh?” a lot.
- turns the volume up on the TV and other electronic devices.
- speaks unclearly.
- has trouble following spoken directions.
- leaves words out of sentences when talking.
- uses tenses (past, present, and future) improperly.
- has trouble catching balls or seeing distant objects.
- has eyes that cross or point outward.
- avoids close work or holds books unusually close when reading.
- complains of eye discomfort, headaches, or blurred vision.

In the past, parents were sometimes blamed for a child’s language disability. They might have been faulted for not reading enough to their children. But research suggests that specific language impairment has other roots. The disorder tends to run in families, which hints that **genes** play a role. Rice led a study of over 300 people, including children with specific language impairment and their families. The scientists identified a gene that’s also linked to dyslexia and other learning disabilities. The finding might eventually lead to better understanding and treatment of these disorders.

Kids don’t usually grow out of specific language impairment. Their language improves, but they can continue to struggle with subtleties even after they enter the workforce. “It is very important to identify these kids, particularly at school entry or before school entry,” Rice says. Many school districts screen children for specific language impairment before kindergarten. Language therapy can help children catch up.

Poor vision can also cause trouble in school, and the problems may go unnoticed. Vision problems are common in preschoolers, but kids don’t always tell others about their symptoms. Children might even think it’s normal to see double or for things to be blurry. But poor eyesight can cause headaches and hinder reading. Some children with vision problems might seem to have attention difficulties, since eyestrain and headaches can make it hard to stay on task.

The most common cause of vision impairment in children is amblyopia, or lazy eye. It often arises if the eyes point in different directions, or if one eye produces a better image than the other. The brain starts to shut down signals from the weaker eye. Treatment encourages use of the weaker eye, sometimes by putting a patch over the other eye. NIH-funded research has found that treatment for amblyopia is more effective if begun when a child is young.

Some children are nearsighted, with problems focusing on faraway objects like the chalkboard. It’s less common for youngsters to be farsighted, with trouble focusing on up-close items. Both can be corrected with eyeglasses or contact lenses.

To catch problems early, NIH funded a study of thousands of preschoolers to find the best ways to screen for impaired vision. “How often screening is done and what screening is done varies widely from state to state,” says Dr. Marjean Kulp, a vision researcher at Ohio State University.

Early detection and treatment of hearing, vision, and language problems can give kids a better learning experience.

The study evaluated different tests and identified a few that could best detect vision problems—even when performed by people who aren’t vision specialists.

Screenings only identify potential problems, and they don’t catch everything. Children should have regular exams by an eye care professional.

Early detection and treatment of hearing, vision, and language problems can give kids a better learning experience. ■



Definitions

Genes

Stretches of DNA, a substance you inherit from your parents, that affect many aspects of human development and health.



Web Links

For more about senses, speech, and language, go to: newsinhealth.nih.gov/special-issues/parenting/see-hear-speak

Keeping Up in School?

Identifying Learning Problems

Reading, writing, and math are the building blocks of learning. Mastering these subjects early on can affect many areas of life, including school, work, and even overall health. It's normal to make mistakes and even struggle a little when learning new things. But repeated, long-lasting problems may be a sign of a learning disability.

Learning disabilities aren't related to how smart a child is. They're caused by differences in the brain that are present from birth, or shortly after. These differences affect how the brain handles information and can create difficulties with reading, writing, and math.

"Typically, in the first few years of elementary school, some children, in spite of adequate instruction, have a hard time and can't master the skills of reading and writing as efficiently as their peers," says Dr. Benedetto Vitiello, a child mental health expert at NIH. "So the issue is usually brought up as a learning problem."

In general, the earlier a learning disability is recognized and

Learning disabilities aren't related to how smart a child is. They're caused by differences in the brain that are present from birth, or shortly after.

addressed, the greater the likelihood for success in school and later in life. "Initial screening and then ongoing monitoring of children's performance is important for being able to tell quickly when they start to struggle," explains Dr. Brett Miller, a reading and writing disabilities expert at NIH. "If you're not actively looking for it, you can miss

opportunities to intervene early."

Each learning disability has its own signs. A child with a reading disability may be a poor speller or have trouble reading quickly or recognizing common words. A child with a writing disability may write very slowly, have poor handwriting, or have trouble expressing ideas in writing and organizing text. A math disability can make it hard for a child to understand basic math concepts (like multiplication), make change in cash transactions, or do math-related word problems.

Learning difficulties can affect more than school performance. If not addressed, they can also affect health. A learning disability can make it hard to understand written health information, follow a doctor's directions, or take the proper amount of medication at the right times. Learning disabilities can also lead to a poor understanding of the benefits of healthy behaviors, such as exercise, and of health risks, such as obesity. This lack of knowledge can result in unhealthy behaviors and increased risk of disease.

Not all struggling learners have a disability. Many factors affect a person's ability to learn. Some students may learn more slowly or need more practice than their classmates. Poor vision or hearing can cause a child to miss what's being taught. Poor nutrition or exposure to toxins early in life can also contribute to learning difficulties.

If a child is struggling in school, parents or teachers can request



The earlier a learning disability is recognized and addressed, the greater the likelihood for success in school and later in life.

an evaluation for a learning disability. The U.S. Individuals with Disabilities Education Improvement Act requires that public schools provide free special education support to children, including children with specific learning disabilities, who need such services. To qualify for these services, a child must be evaluated by the school and meet specific federal and state requirements. An evaluation may include a medical exam, a discussion of family history, and intellectual and school performance testing.

Many people with learning disabilities can develop strategies to cope with their disorder. A teacher or other learning specialist can help kids learn skills that build on their strengths to counter-balance their

weaknesses. Educators may provide special teaching methods, make changes to the classroom, or use technologies that can assist a child's learning needs.

A child with a learning disability may also struggle with low self-esteem, lack of confidence, and frustration. In the case of a math learning disability, math anxiety may play a role in worsening math abilities. A counselor can help children use coping skills and build healthy attitudes about their ability to learn.

"If appropriate **interventions** are provided, many of these challenges can be minimized," explains Dr. Kathy Mann Koepke, a math learning disability expert at NIH. "Parents and teachers should be aware that their own words and behavior around learning and doing math are implicitly learned by the young people around them and may lessen or worsen math anxiety."

"We often talk about these conditions in isolation, but some people have more than one challenge," Miller says. Sometimes children with learning disabilities have another learning disorder or other condition, such as attention deficit hyperactivity disorder (ADHD).



Wise Choices

Signs of a Learning Disability

Consider talking with your doctor if you notice these signs in your child:

- Difficulty with reading and/or writing
- Problems with math skills
- Difficulty remembering
- Trouble following directions
- Difficulty with concepts related to time
- Problems staying organized

"ADHD can be confused with a learning problem," Vitiello says. ADHD makes it difficult for a child to pay attention, stay focused, organize information, and finish tasks. This can interfere with schoolwork, home life, and friendships. But ADHD is not considered a learning disability. It

Parents and teachers should be aware that their own words and behavior around learning and doing math are implicitly learned by the young people around them and may lessen or worsen math anxiety.

requires its own treatments, which may include behavior therapy and medications.

"Parents play an important role in treatment, especially for children in elementary school," Vitiello says. Medications and behavioral interventions are often delivered at home. Teachers can usually advise parents on how to help kids at home, such as by scheduling appropriate amounts of time for learning-related activities. Parents can also help by minimizing distractions and encouraging kids to stay on task, such as when doing homework. Effective intervention requires consistency and a partnership between school and home.

Many complex factors can contribute to development of learning disabilities. Learning disorders tend to run in families. Home, family, and daily life also have a strong effect on a child's ability to learn starting from a very early age. Parents can help their children develop skills and build knowledge during the first few years of life that will support later learning.

"Early exposure to a rich environment is important for brain development," Mann Koepke says. Engage your child in different learning activities from the start. Before they're even speaking, kids are learning. "Even if it's just listening and watching as you talk about what you're doing in your daily tasks," she says.

Point out and talk with children about the names, colors, shapes, sizes, and numbers of objects in their environment. Try to use comparison words like "more than" or "less than." This will help teach your child about the relationships between things, which is important for learning math concepts, says Mann Koepke. Even basic things, like getting enough sleep and eating a healthy diet, can help children's brain development and their ability to learn.

NIH is continuing to invest in research centers that study learning challenges and their treatments, with a special focus on understudied and high-risk groups.

Although there are no "cures," early interventions offer essential learning tools and strategies to help lessen the effects of learning disabilities. With support from caregivers, educators, and health providers, people with learning disabilities can be successful at school, work, and in their personal lives. ■



Definitions

Interventions

Actions taken to prevent or treat a disorder or to improve health in other ways.



Web Links

For more about learning problems, go to: newsinhealth.nih.gov/special-issues/parenting/keeping-up-school

Safeguarding Our Health

Vaccines Protect Us All

We share more than food and culture within our homes and communities. We can also spread disease. Luckily, we live in a time when vaccines can protect us from many of the most serious illnesses. Staying current on your shots helps you—and your neighbors—avoid getting and spreading disease.

Vaccines have led to large reductions in illness and death for both kids and adults, says Dr. David M. Koelle, a vaccine expert at the University of Washington in Seattle. One study estimated that, among U.S. children born from 1994 to 2013, vaccines will prevent about 322 million illnesses, 21 million hospitalizations, and 732,000 deaths.

Vaccines harness your **immune system's** natural ability to detect and destroy disease-causing germs and then “remember” the best way to fight these germs in the future. Vaccination, or immunization, has completely eliminated naturally occurring smallpox worldwide—to the point that we no longer need to get shots against this fast-spreading, deadly disease. Polio has been eliminated in the U.S. and most other nations as well, thanks to immunizations. Poliovirus can affect the brain and spinal cord, leaving people unable to move their arms or legs, or sometimes unable to breathe.

“These childhood diseases used to be dreaded problems that would kill or paralyze children,” says Koelle. “In the 1950s, it was a common occurrence for kids to be fine in the spring, get polio over the summer, and then have to go back to school in the fall no longer able to walk.”

Definitions

Immune System

A collection of specialized cells and organs that protect the body against infectious diseases.

Experts recommend that healthy children and teens get shots against 16 diseases (see Wise Choices box). With these shots, many disabling or life-threatening illnesses have significantly declined in the U.S., including measles, rubella, and whooping cough. But, unlike smallpox, these disease-causing germs, or pathogens, are still causing infections around the world.

“These days, the risks of not being vaccinated in a developed country, like the United States, may seem superficially safe because of low rates of infection due to vaccination and other advances in public health,” Koelle says. “But we live in an era of international travel where we can be exposed to mobile pathogens.” So even if you don’t travel, a neighbor or classmate could go overseas and bring the disease back to your area.

“When the rates of vaccination drop, there can be a resurgence of the disease,” explains Dr. Saad Omer, a global health researcher at Emory University in Atlanta. For instance, measles was completely eliminated in the U.S. in 2000. But since then, thousands of cases have occurred, mostly related to travel.

Omer and colleagues examined U.S. reports on measles outbreaks since 2000. “We found that measles cases have occurred mostly in those who are not vaccinated and in communities that have lower rates of vaccination. And that’s true for many vaccine-preventable diseases,” he says. Most of the unvaccinated cases were those who chose not to be vaccinated or not have their children vaccinated for non-medical reasons.

When enough people are vaccinated, the entire community gains protection from the disease. This is called community immunity. It



helps to stop the spread of disease and protects the most vulnerable: newborns, the elderly, and people fighting serious illnesses like cancer. During these times, your immune system is often too weak to fend off disease and may not be strong enough for vaccinations. Avoiding exposure becomes key.

These childhood diseases used to be dreaded problems that would kill or paralyze children.

“There’s a huge benefit to all of us getting the recommended vaccines,” explains Dr. Martha Alexander-Miller, an immune system expert at Wake Forest Baptist Medical Center in Winston-Salem, North Carolina. “Number one, vaccines protect you. But they also limit the presence of disease-causing entities that are circulating in the community. So, you’re helping to protect individuals who may not be capable of protecting themselves, for example because they are too young to get vaccinated.”

When expectant moms are vaccinated, immune protection can pass through the placenta to the fetus. “Early on, the baby’s immune system is immature. So there’s a period of vulnerability where disease and death can occur,” Omer explains.

“But the mother’s own antibodies—proteins formed by her immune system—can protect the baby.”

Doctors recommend that moms-to-be get both flu and Tdap (tetanus, diphtheria, and whooping cough) shots. A mother’s antibodies can help protect the newborn until they can receive their own vaccinations.

Some vaccines must be given before pregnancy. Rubella, for instance, can cause life-altering birth defects or miscarriage if contracted during pregnancy. There’s no treatment, but the measles, mumps, and rubella (MMR) vaccine offers prevention. Vaccines for many other common diseases that put newborns at risk are being studied.

“We’ve made amazing progress in the development of effective vaccines,” says Alexander-Miller. “Our ability to have such breakthroughs is the end result of very basic research that went on for years and years.” NIH-funded scientists continue to search for new ways to stimulate protection against various diseases.

Koelle studies how our bodies fight herpes viruses. There are eight related herpes viruses, but the body responds differently to each one. So

far, we only have vaccines for one: varicella-zoster virus, which causes chickenpox and shingles.

Koelle’s team is comparing how our immune system responds to chickenpox and the herpes simplex viruses, which cause mouth and genital sores. “We’re hoping to harness the success that has been possible with the chickenpox vaccine and see if we can create a vaccine that would work for both chickenpox and shingles and also herpes simplex,” he says.

Researchers are also working to improve existing vaccines. Some vaccines require a series of shots to trigger a strong immune response. The protection of other vaccines can fade over time, so booster shots may be needed. Some, like the flu vaccine, require a shot each year because the virus changes so that the vaccine no longer protects against new strains. So keeping up with the latest flu vaccines is important.



Web Links

For more about vaccines, go to: newsinhealth.nih.gov/special-issues/parenting/safeguarding-our-health

Ask your doctor’s office whether your vaccinations are current. You may also find records of vaccinations at your state health department or schools. If you can’t find your records, ask your doctor if it’s okay to get a vaccine you might have received before.

Most side effects of vaccines are mild, such as a sore arm, headache, or low-grade fever.

“It can be easy to take vaccines for granted, because you’ll never know all the times you would’ve gotten really sick had you not been vaccinated,” says Alexander-Miller.

Help your community keep diseases at bay: Stay up-to-date with vaccines. ■



Wise Choices Recommended Vaccines

Talk to your doctor about these shots. Learn more at www.cdc.gov/vaccines/schedules/easy-to-read/index.html:

- Bacterial meningitis
- Chickenpox
- *Haemophilus influenzae* type b
- Hepatitis A and Hepatitis B
- Cervical & other cancers caused by human papillomavirus (HPV)
- Influenza (flu)
- Measles, Mumps, and Rubella—MMR
- Pneumococcal pneumonia
- Rotavirus diarrhea
- Shingles
- Tetanus, Diphtheria, and Pertussis (whooping cough)—DTaP/Tdap



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