

Big Steps in Small Shoes

Hattie has been telling her parents her toes hurt with some frequency lately. Hearing this, her mother Lee Ann isn't typically worried that Hattie has stumbled while playing or dropped something on her foot. It's usually a sign that Hattie's growth hormone injections are at work. "She goes through shoes like crazy," Lee Ann says, "and her clothes are too small, too."

Hattie receives daily injections as part of her participation in a growth hormone research trial at ACH. Dr. Stephen Kemp, a pediatric endocrinologist, is the site investigator for the clinical study. The study enrolls patients plotted to have a height significantly below the mean for their age and gender without evidence of underlying disease or growth hormone deficiency. This condition known as idiopathic short stature (or ISS) applies to 400,000 children in the US.

While the FDA has approved recombinant growth hormone (rhGH) for ISS, insurance generally doesn't cover the expense for ISS; therefore, studies like this one can be a family's best opportunity to obtain rhGH for a child with ISS. The study at ACH is considering the safety and efficacy of rhGH. The results are part of a database to examine height improvement and therapeutic success. Dr. Kemp and Research Coordinator Kathy Edwards, RN, see 25 to 50 patients annually. The ACH site is part of a several networks, including the National Cooperative Growth Study and the KIGS Growth Study, and these networks pool ACH's findings with those of researchers throughout North America. The large number of patients in the network provides a fertile database for Dr. Kemp and other researchers to examine.

"Growth hormone research has been something ACH has been involved with since 1984," says Dr. Kemp. Then patients and researchers had access only to human organ donor-derived growth hormone. This circumstance provided a limited supply, a supply that also had safety concerns. "Once recombinant growth hormone became available 1985, the supply became limited by the cost, not the organ," says Dr. Kemp.

Diagnosed with ISS, Hattie's pediatrician plotted her adult height to be 4'8" to 4'9". The pediatrician put the family in touch with Kathy Edwards. After approval to enroll in the study, Hattie now receives daily injections of rhGH. While most people don't enjoy shots, this eight-year-old isn't bothered. "She's tough," says her mother. "We rotate her shots from one arm to the other and then from one leg to the other." The family travels to ACH from their home in eastern Oklahoma every 4 months for follow-up visits that include more than height measurement. The visit may include a blood draw for an assortment of tests and for banking for future research questions.



Hattie is participating in a growth hormone research trial at ACH. As Hattie's height has increased, her confidence has increased even more.

Now, as Hattie's height has increased, her confidence has increased even more. She is also active in a variety of sports including swimming, basketball, and golf. "Hattie's busy measuring herself and others, too," says Lee Ann. And, Dr. Kemp will keep measuring her as well.



Established in 1989, Arkansas Children's Hospital Research Institute provides an on-site research environment for faculty of the University of Arkansas for Medical Sciences working on the Arkansas Children's Hospital campus. Over 120 pediatric researchers with expertise and experience that span the breadth of medical disciplines comprise ACHRI's roster of investigators who work to fulfill its mission to improve children's health, development, and well-being through high quality research. For more information, visit <http://achri.archildrens.org>.