

# Kids with arthritis in less affluent families report longer period of morning stiffness

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Children with arthritis affecting five or more joints, called polyarticular juvenile idiopathic arthritis (polyarticular JIA), living in less affluent families were twice as likely to report more than an hour of morning

joint stiffness, compared to their counterparts from more affluent families, according to a study by investigators at Hospital for Special Surgery (HSS). Parents and physicians should be aware that morning joint stiffness may indicate early disease symptoms of polyarticular JIA and serve as a more reliable indicator than pain.

Juvenile idiopathic arthritis (JIA) is a condition involving joint inflammation that lasts more than six weeks in [children](#) or adolescents under 16 years of age. It is the most common form of childhood arthritis, affecting about 1 in 1,000 children and teens in the United States. Scientists believe a combination of genetic predisposing factors and the environment causes JIA but the exact cause is unknown.

Polyarticular JIA is a chronic form of the disease with symptoms of pain, swelling, [stiffness](#) or warmth in four or more joints. Younger children may develop a limp or have difficulty using their fingers yet not complain about pain. Symptoms are typically worse first thing in the [morning](#) or after a period of rest and improve throughout the day as the child becomes more active.

"Polyarticular JIA looks a lot like rheumatoid arthritis in adults. Early diagnosis is essential to help keep the disease in remission, ensure children meet developmental milestones and delay or prevent joint destruction as they age," says Nayimisha Balmuri, MD, a third-year pediatric rheumatology fellow at HSS and lead author of the study. "Reported morning joint stiffness may be a better indicator of early disease symptoms than pain since reporting pain can be influenced by cultural factors. Our findings underscore the importance of early referral of suspected cases for expert diagnosis and treatment."

The study abstract is featured today in a poster presentation at ACR Convergence 2020, the American College of Rheumatology's annual conference, which is being held virtually this year.

Dr. Balmuri and colleagues, including senior author Karen Brandt Onel, MD, chief of pediatric rheumatology at HSS, identified 1,684 American patients diagnosed with polyarticular JIA using the Childhood Arthritis and Rheumatology Research Alliance (CARRA) Registry from July 2015 through February 2020. The CARRA Registry is a collection of information provided by North American patients and families on childhood-onset rheumatic diseases, including JIA.

The investigators extracted data on the presence and duration of morning joint stiffness. They also examined reported [family income](#), the highest level of guardian-completed education and community poverty level, collectively called social determinants of health, using zip codes and the 2014-2018 American Community Survey. Finally, Dr. Balmuri and colleagues included the rheumatoid factor (RF) and anti-cyclic citrullinated peptide (anti-CCP) antibody status from patients' diagnostic lab results as indicators of disease severity. The patients were seven years of age, on average.

The researchers found that children with polyarticular JIA from less affluent families, defined as having an income of \$25,000 to \$49,000, were twice as likely to report more than an hour of morning joint stiffness compared to children with the condition from families with an income of more than \$100,000. This association between reported morning joint stiffness held even after the researchers adjusted the data for age at diagnosis, and RF and CCP status.

"Family income as an indicator for insurance status may indicate that more affluent families can navigate the healthcare system better, ensuring their children see pediatricians sooner and therefore obtain earlier referrals to pediatric rheumatology sub-specialists," says Dr. Balmuri. "We can't prove that with our present study, but our findings raise important questions for further research."

"We hope our findings encourage physicians to ask patients about morning joint stiffness, not just pain, which may streamline the referral process," Dr. Balmuri says. "Time to referral affects how soon we can initiate multidisciplinary care, which may include medications, physical therapy and occupational therapy that are crucial for improving mobility and joint function over these children's lifetimes."

**More information:** Nayimisha Balmuri et al. Who Ordered the Stiff One? Characteristics of Polyarticular Juvenile Idiopathic Arthritis Patients Associated with the Presence and Increased Duration of Joint Stiffness. [acrabstracts.org/abstract/who- ... -of-joint-stiffness/](https://acrabstracts.org/abstract/who-...-of-joint-stiffness/)

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