

To play, or not to play

Healthy play, better coping

Stimulating play through games may empower chronically ill children in their everyday lives.

By: Sanne Nijhof, Stefan van Geelen, Stef Haarler, Sasja Duijff, Christiaan Vinkers, Heidi Lesscher

*«I always feel as if people can't help me with any of my problems. This makes me anxious, nervous and lonely»
Adolescent patient with Chronic Fatigue Syndrome*

Chronic diseases negatively impact children's physical, behavioural and cognitive development beyond the actual illness itself. Also in infants with (early) life-threatening events, such as remission after childhood cancer or admission to neonatal intensive care unit (NICU), physical development obviously can be affected, but negative consequences on their psychological well being and social participation could be significant as well. Physical disabilities, developmental disorders, and social exclusion are major factors that may lead to limited play options for these children. Play behaviour is essential for the development of an individual. Therefore, on top of their (physical) disease, impaired play may have long-lasting consequences for these children as they grow up. Studying and developing play and game interventions for this particular population is of utmost importance: to empower them and combat the conse-

quences of their chronic or life-threatening condition, so that they can ultimately develop into healthy adults.

From a developmental perspective, play offers ample physical, emotional, cognitive, and social benefits. It allows children and adolescents to develop their motor skills, experiment with their (social) behavioural repertoire, helps them simulate alternative scenarios, and address the various positive and negative consequences of their behaviour in a safe and engaging context.

Innovative forms of play

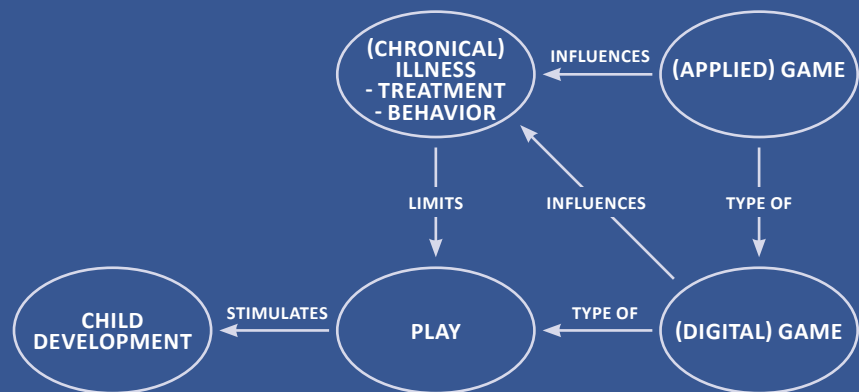
Recently, we started a new multi-disciplinary research project regarding the developmental and therapeutic aspects of play and applied games in children and adolescents with chronic or life-threatening conditions. A promising collaborative network of professionals from various disciplines across



*«Will I participate at the level of an elderly person, or will I not participate at all?»
Young patient with Cystic Fibrosis*



«I remember that I always had to be aware of my arthritis. When other kids played outside, I couldn't take part» Young adult patient with Juvenile Idiopathic Arthritis



Conceptual research area of games as intervention for (chronic) diseased children.

the Utrecht University campus will help to answer questions such as: What is the adaptive functionality of play in children with chronic or life-threatening diseases? How can innovative forms of play and gaming interventions stimulate coping with their situation? Will better coping improve their development, leading, for example, to better social participation later in life?

Bullying

Children and adolescents with chronic conditions constitute at least 15% of the Dutch population under the age of 18. This means that roughly 600,000 children in the Netherlands are chronically ill, ranging from mild impairments to severe limitations in daily functioning. Naturally, they suffer the somatic and psychological consequences of their illnesses. However, isolation, stigmatization, inequality, bullying, and doubts concerning their physical and intellectual capacities are everyday realities for this vulnerable group in our society.

Health redefined

In 1948, the World Health Organization defined health as 'a state of complete well-being and absence of disease'. Recently, it has been proposed to

Bio.

► **DR. STEFAN VAN GEELEN** is a philosopher and researcher at the Wilhelmina Children's Hospital Utrecht. His main academic interests are in the conceptual and empirical study of how vulnerable patient groups experience themselves and developing and testing new strategies to promote health.

► **STEF HAARLER** studies Information Science at the University of Utrecht and is contributing to this project for his master thesis.

► **DR. HEIDI LESSCHER** is behavioural neurobiologist and researcher at the Faculty of Veterinary Medicine. She is interested in the role of behavioural characteristics, including social play and impulsivity and age-of-onset in the development of addiction and behavioural control.

► **DR. CHRISTIAAN VINKERS** is a psychiatrist and researcher at the Rudolf Magnus Brain Center. His overall research objective is to investigate the neurobiological background of stress resilience and vulnerability including (epi)genetic, neuroendocrine, and brain circuitry factors, with a special interest in the GABA system.

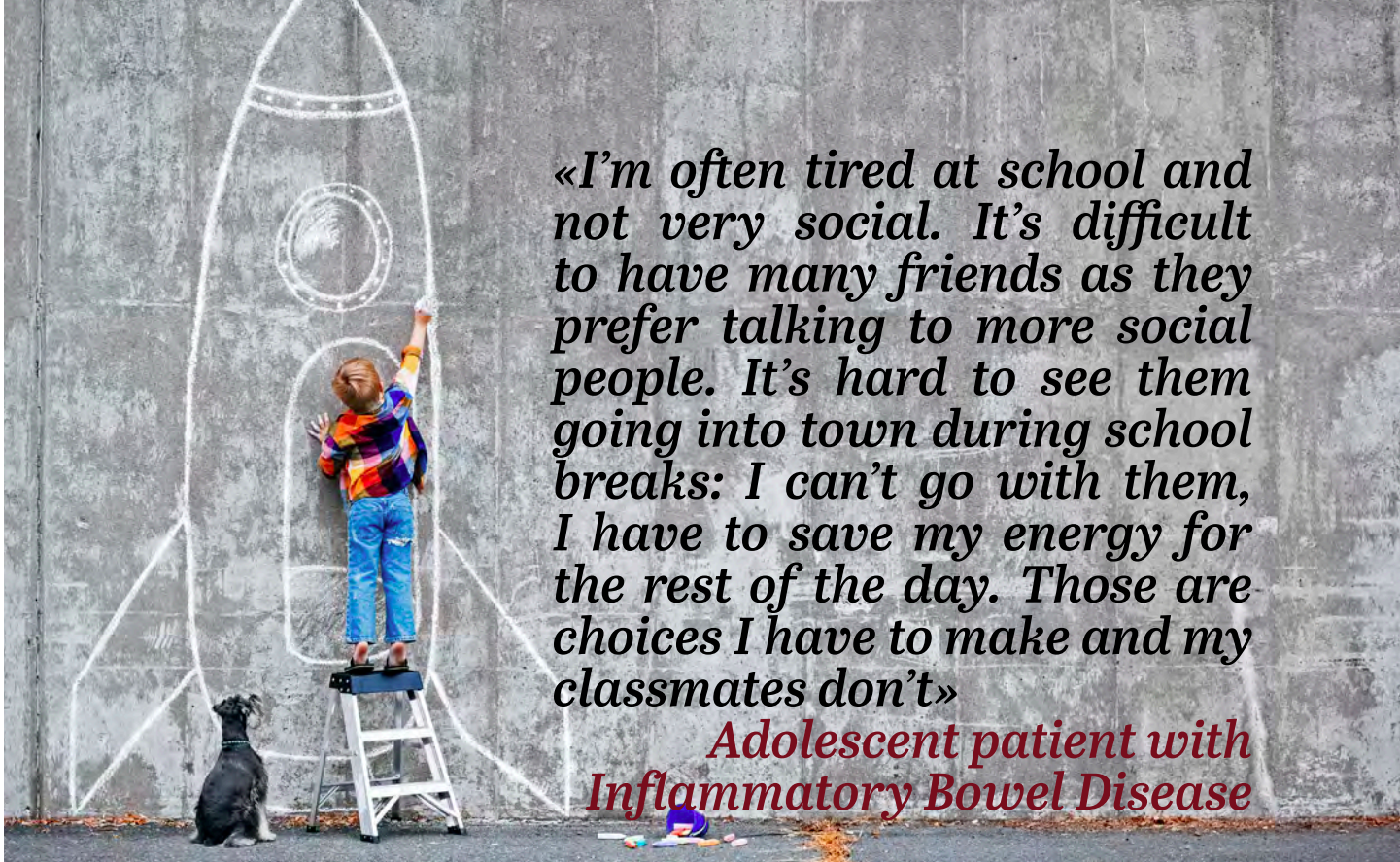
► **DR. SASJA DUIJFF** is a paediatric psychologist and researcher at the division of Paediatrics, UMCU. She has a special interest in the cognitive development of children with the 22q11.2 deletion syndrome.

► **DR. SANNE NIJHOF** is a paediatrician and researcher at the Wilhelmina Children's Hospital Utrecht. She investigates 'patient related outcomes' like fatigue, pain, well-being, and societal participation in various somatically defined paediatric patient groups, and uses their experience in research at web-based monitoring of health-related outcomes and treatment modalities.

redefine health as 'the ability to adapt and self-manage in the face of social, physical and emotional challenges'. In line with such notions, patients, researchers, caretakers and policy makers emphasize the need to help people with chronic and/or life-threatening conditions to increase their ability to adapt, and their self-manage capacities. Optimal comprehensive strategies addressing childhood conditions might therefore use theories of play as a conceptual framework. They will also systematically monitor the child's capacity and ability to play and the well-being of the patients and their families. This will help to assess vulnerabilities and resilience among children with chronic and/or life-threatening conditions. This knowledge can be used as an innovative and interactive method for creating prevention and treatment strategies. Conceptualizing and studying play – precisely understood as stimulating the ability to adapt and self-manage as an integral part of child's health - is therefore timely and much needed.

Constructive influence

There is growing evidence that action games can have a constructive influence on young people's cogni-




«I'm often tired at school and not very social. It's difficult to have many friends as they prefer talking to more social people. It's hard to see them going into town during school breaks: I can't go with them, I have to save my energy for the rest of the day. Those are choices I have to make and my classmates don't»

Adolescent patient with Inflammatory Bowel Disease

tive processes such as focus, problem solving skills, spatial skills and mental rotation. Moreover, a positive relationship between playing video games and a child's creativity has also been reported, and high usage seems to be positively correlated with good intellectual functioning and academic achievement. Just as with regular play, video games can be real enough to make the accomplishments of goals matter, but are also a safe way to practice such skills as controlling or modulating negative emotions in order to achieve those goals. It has also been suggested that the immersive social context of today's games help gamers rapidly learn social skills and pro-social behaviour, which might generalize to their peer and family relations outside of gaming environments. In this context, it becomes increasingly interesting to study whether interactive technology might enable young patients to rise above the limitations of their conditions and to participate in play in augmented realities.

Animal models

Still, very little is known on the relation between play/gaming, child development and chronic and/or life-threatening illness. To address

these complex multi-level topics, the consortium uses animal models to determine whether and how chronic or life-threatening illness affects social play behaviour and, as a result, alters social and neurocognitive development. From a developmental perspective, we will examine the role of impaired play behaviour resulting from childhood health issues on social development, societal participation and stress-regulation. This can result in novel preventive strategies to increase the resilience and social participation of young people with long-term illnesses. In a collaboration between preclinical neuroscientists, paediatricians, psychologists and other caregivers/scientists, we will attempt to influence treatment outcomes and assess whether stimulation of play will help children with chronic or life-threatening diseases, as well as their families, to more effectively deal with their condition. Using innovative applied gaming approaches and interaction technology in childhood illness, we aim to facilitate the healthy development of bodily self-awareness, physical and motor skills, emotional sensitivity and flexibility, cognitive abilities, social competence, creativity and problem-solving capabilities. 

Project Info.

► HEALTHY PLAY, BETTER COPING

FUNDED BY DYNAMICS OF YOUTH
DYNAMICS OF YOUTH IS ONE OF THE STRATEGIC THEMES OF UTRECHT UNIVERSITY

APPROXIMATELY TWENTY TEAM MEMBERS ARE INVOLVED IN THIS PROJECT.

THESE ARE THE PARTICIPATING INSTITUTES:
WILHELMINA CHILDREN'S HOSPITAL (WKZ)/
UNIVERSITY MEDICAL CENTER UTRECHT (UMCU)

DEPARTMENT OF INFORMATION AND COMPUTING SCIENCES, FACULTY OF SCIENCE
UTRECHT UNIVERSITY

DEPARTMENT OF ANIMALS IN SCIENCE AND SOCIETY, FACULTY OF VETERINARY MEDICINE, UTRECHT UNIVERSITY

FACULTY OF SOCIAL AND BEHAVIOURAL SCIENCES, UTRECHT UNIVERSITY

UTRECHT UNIVERSITY SCHOOL OF GOVERNANCE, FACULTY OF LAW ECONOMICS AND GOVERNANCE, UTRECHT UNIVERSITY

PRINCESS MAXIMA CENTER FOR PAEDIATRIC ONCOLOGY UTRECHT

TRIMBOS INSTITUTE UTRECHT