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## How important is playing for the development of the brain?

Young children and young animals like to play with each other and like to do it often. Researchers [Louk Vanderschuren](#) and [Corette Wierenga](#) of Utrecht University are glad they do. They believe playing is a social stimulus that is very important for the development of the brain and of behaviour. Together, they recently received a NWO grant of almost 300,000 euros to further research the importance of playing.

Vanderschuren and Wierenga both have different backgrounds: Vanderschuren is a Professor of Veterinary Medicine and Wierenga is an Associate Professor of Science. However, they have an important shared field of interest: the brain. Within the university's strategic theme 'Dynamics of Youth', they teamed up, which resulted in the NWO grant.

### CRITICAL PERIOD

These academics from Utrecht state that there are so-called critical periods that occur during the development of the brain. Vanderschuren says: "In these periods, roughly up to puberty, it is essential that there are enough external stimuli to properly construct a network of brain cells." In human brains, a lot of these networks are constructed. Some of them are not used; these inactive networks are eventually deconstructed.

### NO PLAY

But what happens if there are not enough social stimuli during these critical periods? If playing is impossible for some reason, will that result in a crucial lack of networks? In their project, the academics will study how a lack of social stimuli during the development of the brain results in a deviating functionality of the prefrontal cortex. This part of the cortex is important for social behaviour and complex thinking processes.

### RATS

Rats are used to determine the importance of playing. The researchers will not allow the young rats to play with each other. During their project, they will analyse the activity of the brain cells and observe their behaviour while the rats carry out certain cognitive tasks. Vanderschuren says: "The next step is to find a way to compensate for this lack of playing, so this lack will not trouble them as adults."

This research is closely related to the strategic theme [Dynamics of Youth](#) of Utrecht University.

### More information

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