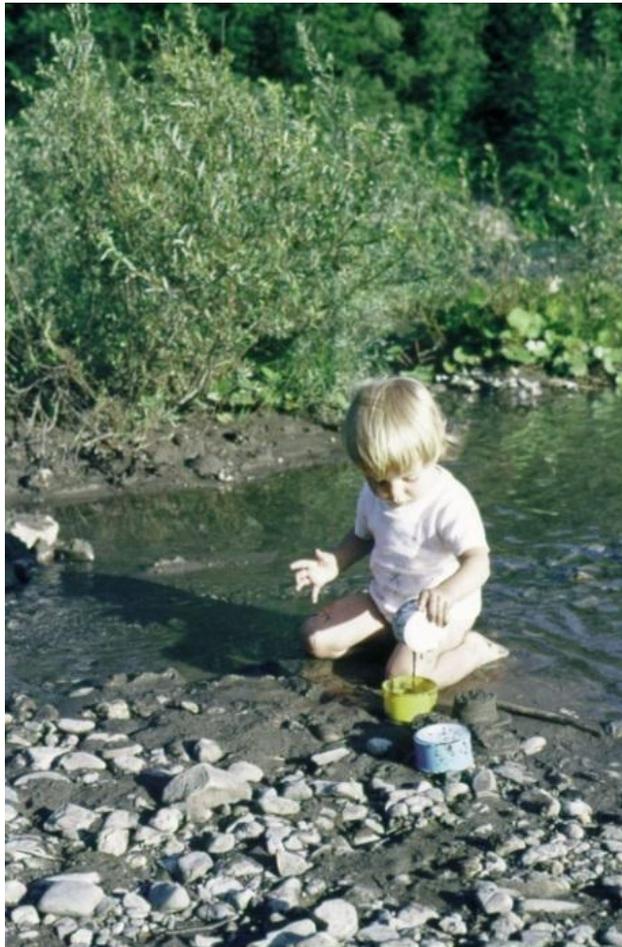


# „Bodies in Motion – Brains in Motion“ Better Learning in an Enriched Environment



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Conference

Dr. Dieter Breithecker  
Federal Institute on the Development  
of Posture and Exercise  
Wiesbaden, Germany



Bundesarbeitsgemeinschaft für  
Haltungs- und Bewegungsförderung e.V.



Bundesministerium  
für Familie, Senioren, Frauen  
und Jugend

# The world has stopped moving



"Childhood Inactivity Will Cost Your Kids 5 Years of Life"

Today's 10 year olds are the first generation expected to have a shorter life expectancy than their parents (The Lancet). Physical inactivity results in an erosion of human potential.



# Lack of Movement in a Sport and Fitness dominated society



Arrange more physical activity in your daily routine.

Physical fitness is more enhanced by sports and physical exercise related activities. Healthy physically, mentally and emotionally interdependencies are more enhanced by spontaneous and environmental related locomotor activity.



# Developmental Processes of Body Mind and Soul do need Movement But: Which Quality of Movement?



Body, Mind and Soul are not able to grow when kids are not facing situations where they do have the chance to grow



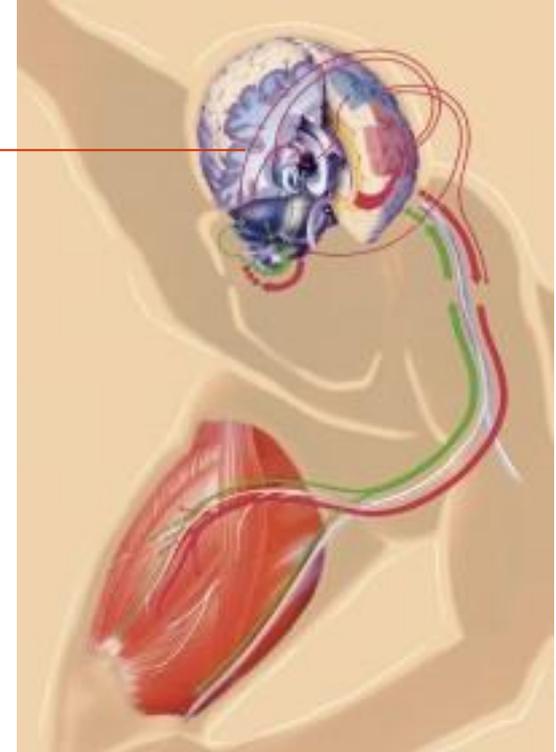
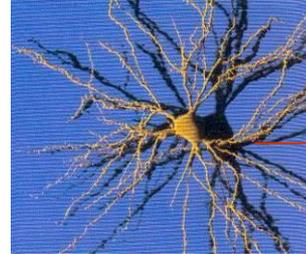
## Learn by children / Learn by Nature

The natural and intuitive behaviour of kids is decisive for the design of an environment which enhances developmental processes



Various research findings show that children are competent, resourceful and active agents who are usually very capable of judging the physical and social risks surrounding them.

# The Human Organism – A Complex System



**Complexity** in general refers to the **attributes** of a **system**, which cannot be described in its overall behavior, even though you have all of the information about **its individual components** and their **interaction**.

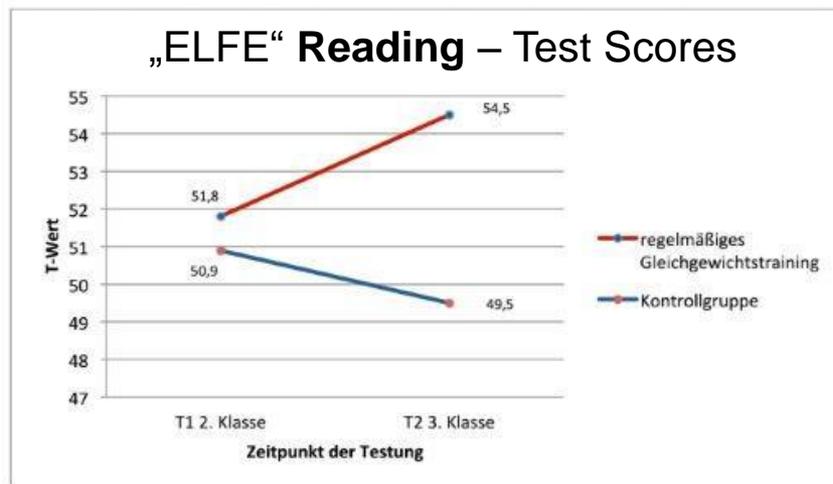
Environment

# Balanced sensory stimulation



- Beispielhaft einige Evaluationsergebnisse in Diagrammdarstellung -

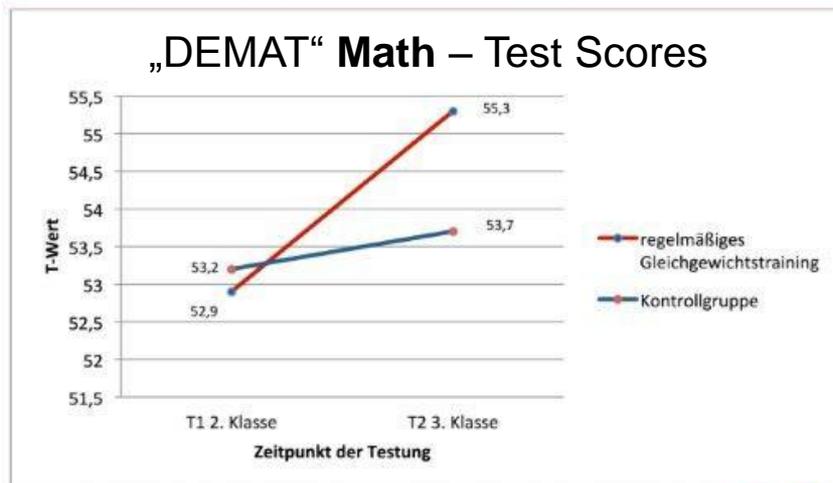
Signifikant bessere Lesefähigkeit (ELFE) \*\*



**Research** in several German elementary schools 2010 – 2012 (18 month)  
State: Hessen

**Intervention Group:** 400 students  
**Control Group:** 250 students

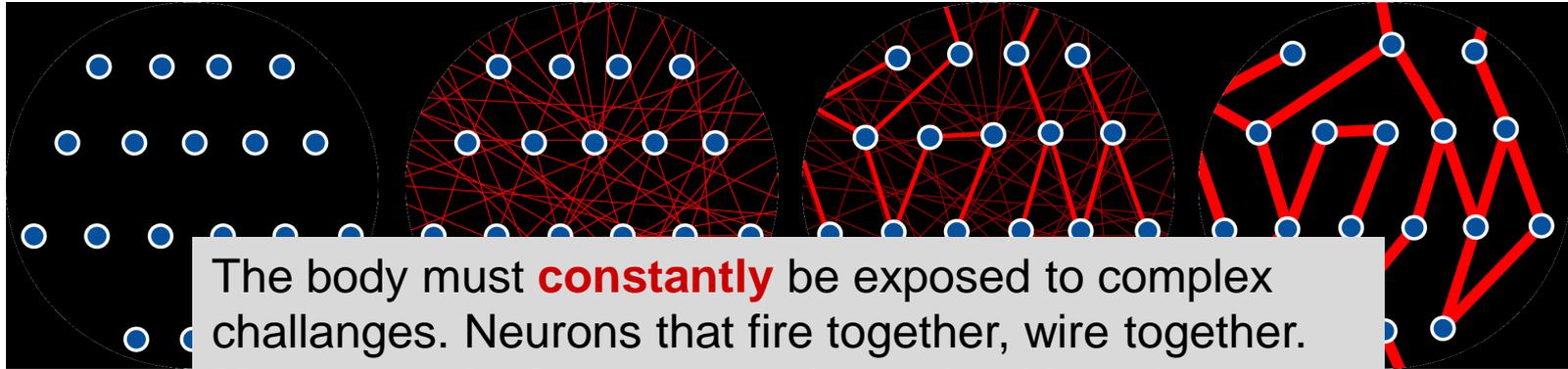
Signifikant bessere Leistungen im Mathematiktest (DEMAT) \*\*



**Intervention Group:** regular stimulation (short units) of the sensomotoric system during a school day (all in all 15 minutes)

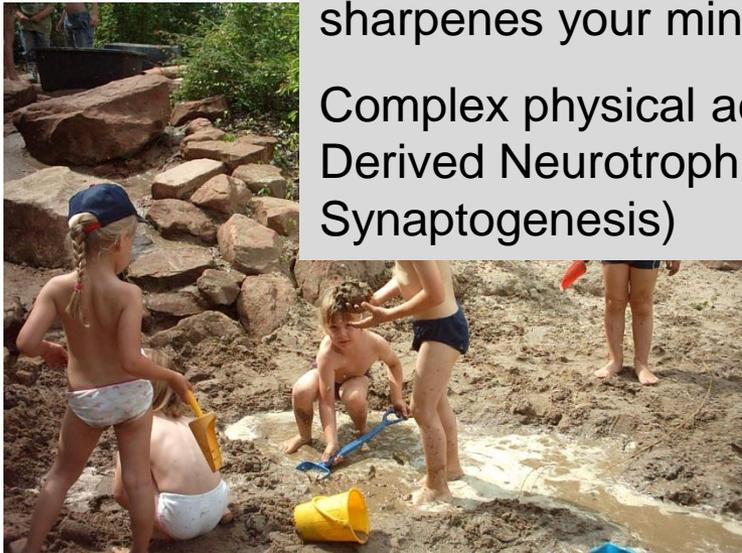
**Result:** significant better test results – red line – of the Intervention Group in comparison to the Control Group – blue line

# The Brain has been formed by Movement, the Brain is made for Movement



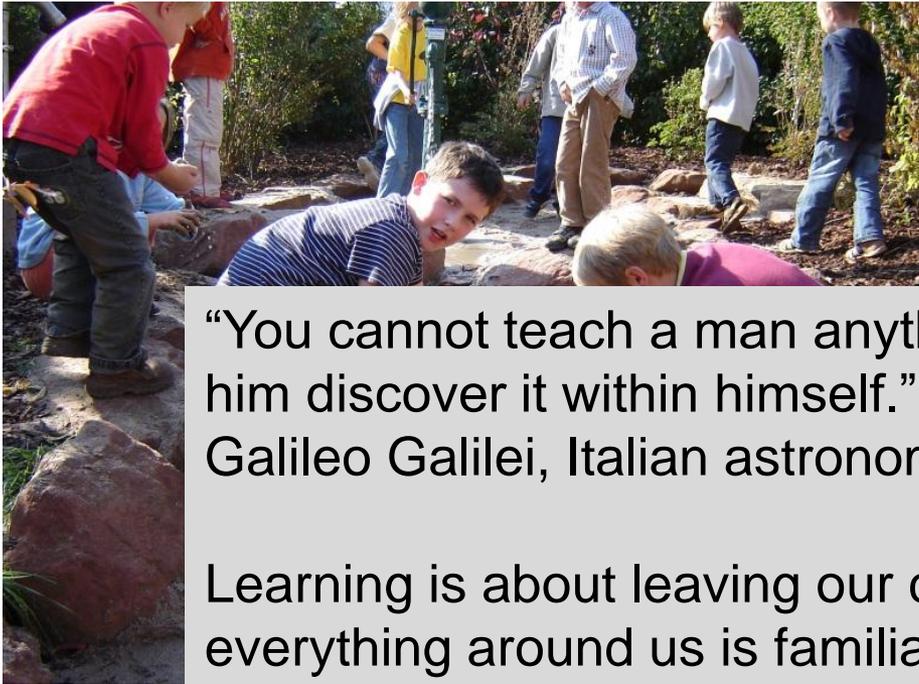
The body must **constantly** be exposed to complex challenges. Neurons that fire together, wire together. **More complexity** promotes better health and sharpens your mind.

Complex physical activities generate BDNF „Brain Derived Neurotrophic Factor“ (Neurogenesis / Synaptogenesis)



# How do we relate Complexity to Teaching and Learning?

Create an enriched (physical / social) environment

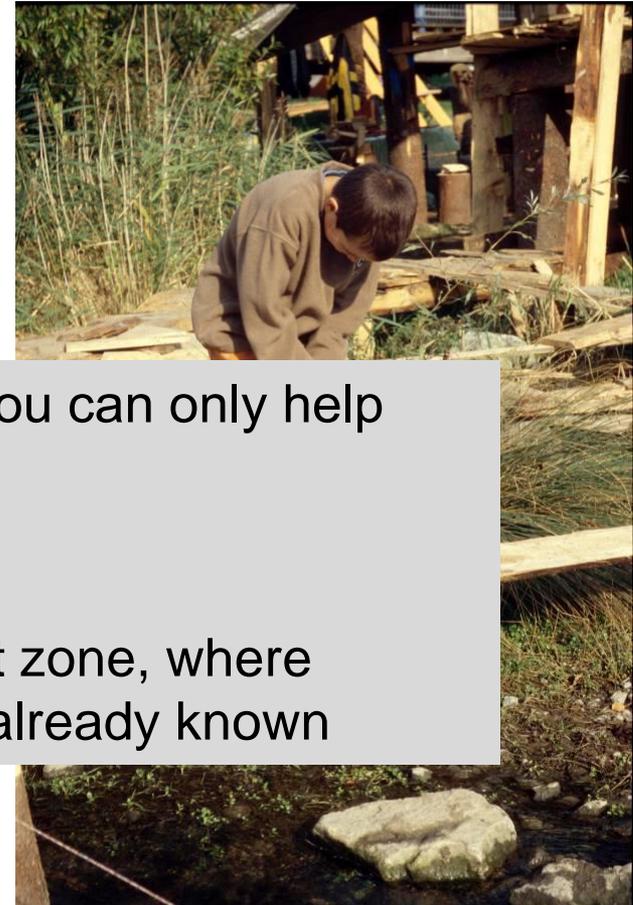


“You cannot teach a man anything. You can only help him discover it within himself.”

Galileo Galilei, Italian astronomer

Learning is about leaving our comfort zone, where everything around us is familiar and already known

Collaboration



Experimenting

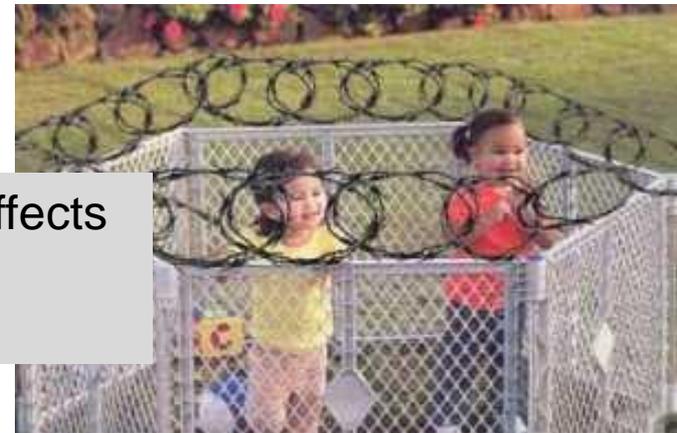
## Effects of Enriched Physical and Social Environments

**Baseline:** Interaction between an organism and its environment can lead to important biological effects / neurobehavioral changes . . . Have powerful effects on brain functions and structure (on **learning and memory functions**)

(Anderson et al., 2002)



A boring and restrictive environment affects the brain negatively, particularly the complexity of its synaptic connections



Brains in richer, more stimulating environments (environments which are more complex and variable) have an increased cortical thickness, and both neuronal and vascular complexity as well as improved cognitive skills

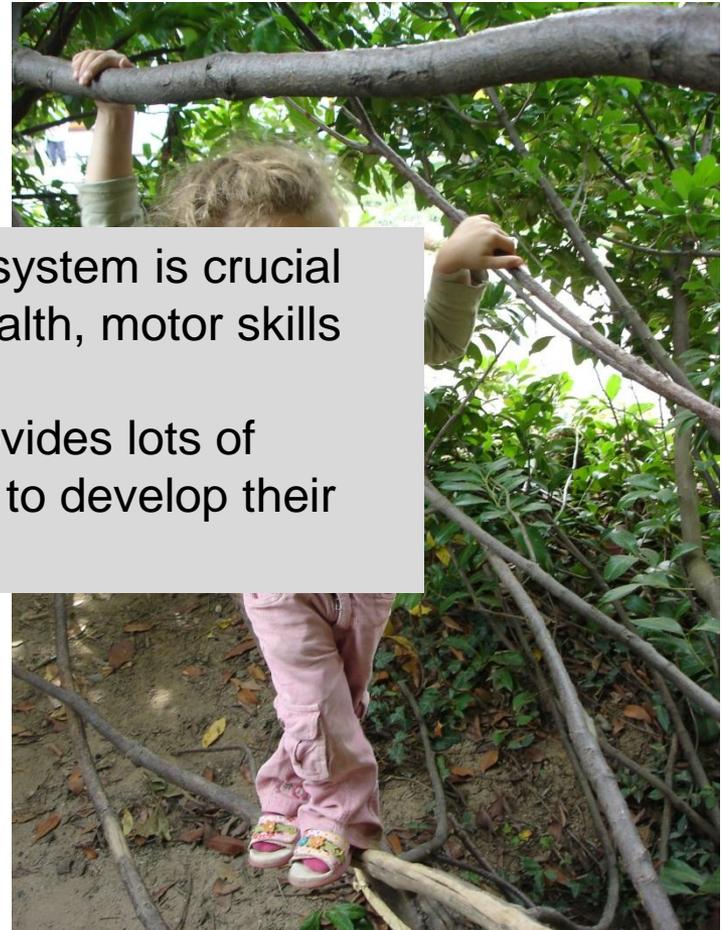


# Children's Dreams . . . To play away from the close adult supervision

- . . . a curiosity based investigation and discovering necessity requires a stimulating environment
- . . . to fill their lives with phantasy and creativity children require an environment where play, pleasure and excitement is fundamental
- . . . face risk and challenge and venture
- . . . wide range of basic motoric activities



# Developmental processes are permanently searching for nourishment



Developing a good sensomotoric system is crucial for becoming risk competence, health, motor skills and cognition.

Especially active physical play provides lots of valuable opportunities for children to develop their sensomotoric system.



Developmental processes are permanently searching for nourishment



# No Risk, No Fun

Overprotecting = minimizes developmental processes



If the environment (including educators) is oversecuring and underchallenging children will become bored.

Without risk and challenge children will find play areas uninteresting, they will use them in an inappropriate way or they will turn towards other challenges



# All life is problem solving



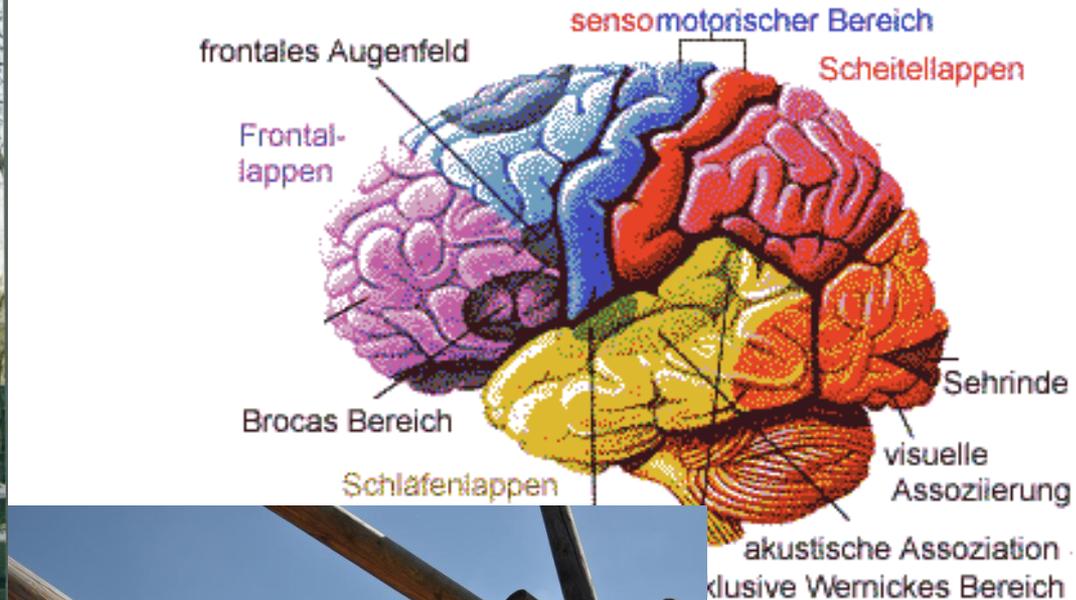
"To live a creative life, we must lose our fear of being wrong." - Joseph Chilton Pierce

"If you don't make mistakes, you're not working on hard enough problems. And that's a big mistake." - Frank Wilczek, Particle Physicist

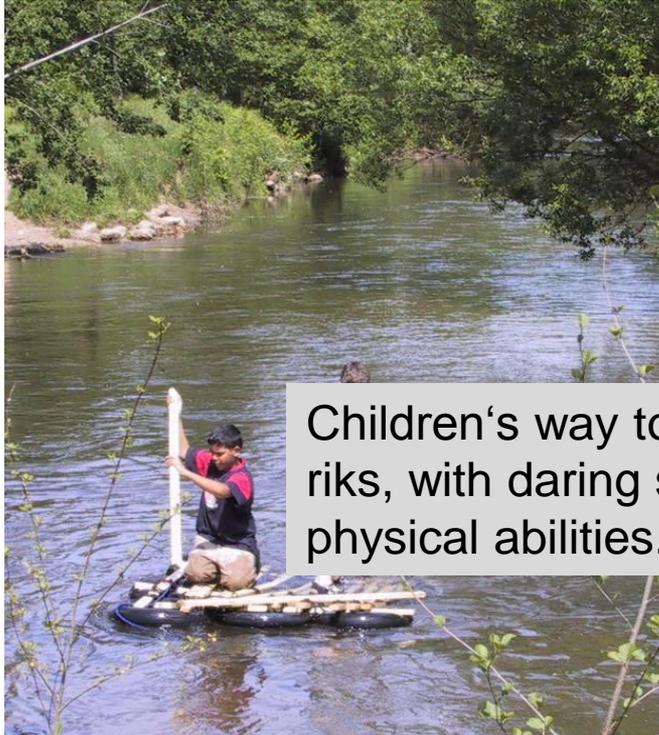


# Prefrontal Cortex

Executive Functions are supported by self organised physical activities / problem solvings



# The Value of Risk and Challenge



Children's way to explore the world is often connected with risks, with daring stunts that takes them to the limits of their physical abilities.



# During the first period of human's life the greatest danger is not to take the risk

## Manging risk and challenge

Learning to cope with risk and to accept challenges is a vital part of human development and learning

. . . becoming knowledge and skills in assesing risks and therefore acquire competence to take risk more safely

. . . to think about the possible consequences of their actions

. . . experience their bodily limits

Children who are sheltered from risk and challenge when young will not be able to make judgements about their own capabilities and will not be well equipped to resist peer pressure in their later years



# „Anti-Phobia-Effect“



Children who are able to climb high before they are getting 9 years of age, won't be afraid of heights in later years.

Becoming risk competence happens step by step. Children do have the capability to keep themselves safe.

# Test your limits – achieve core competences



Negotiating risks or achieving a self-imposed challenge boosts children's . . .

- self-confidence
- self-esteem
- self-perception
- self-protection

For children's holistic development and well being it seems that the consequences of not taking risks are more severe than the potential dangers in risk-taking.

Further informations on the concept  
contact

Dr. Dieter Breithecker

[breithecker@haltungbewegung.de](mailto:breithecker@haltungbewegung.de)

[www.haltungbewegung.de](http://www.haltungbewegung.de)

<http://www.haltungbewegung.de/ergonomics-for-children.aspx>

