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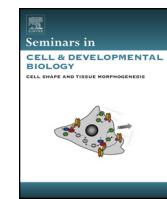
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Review

Early patterns of activity in the developing cortex: Focus on the sensorimotor system

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ABSTRACT

Early development of somatotopic cortical maps occurs during the fetal period in humans and during the postnatal period in rodents. During this period, the sensorimotor cortex expresses transient patterns of correlated neuronal activity including delta waves, gamma- and spindle-burst oscillations. These early activity patterns are largely driven by the thalamus and triggered, in a topographic manner, by sensory feedback resulting from spontaneous movements. Early cortical activities are instrumental for competitive interactions between sensory inputs for the cortical territories, they prevent cortical neurons from apoptosis and their alteration may lead to disturbances in cortical network development in a number of neurodevelopmental diseases.

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Contents

1. Introduction.....	00
2. Early activity in the fetal human cortex: an overview	00
3. Early cortical activity patterns in animal models	00
3.1. Delta waves: the first organized activity pattern in the S1 cortex	00
3.2. Early gamma oscillations and spindle-bursts.....	00
4. Early spontaneous movements and sensory feedback.....	00
4.1. Spinal cord.....	00
4.2. Top-down control of spontaneous movements.....	00
4.3. Motor cortex.....	00
4.4. Sensory input to the S1 cortex under naturalistic conditions	00
4.5. Interspecies and intersystems comparisons.....	00
5. Physiological roles of the early activity patterns	00
5.1. Formation of thalamocortical maps.....	00
5.2. Developmental apoptosis	00
5.3. Neurodevelopmental disorders	00
6. Conclusions and perspectives	00
Acknowledgements.....	00
References	00

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