

# The Moro reflex: insights into the pathophysiology of generalized tonic-clonic seizures and infantile spasms

Francesco Brigo<sup>1</sup>, Alessandro Porro<sup>2,3</sup>, Eugen Trinka<sup>4,5,6</sup>

<sup>1</sup> Department of Neurology, Hospital of Merano (SABES-ASDAA), Merano-Meran, Italy

<sup>2</sup> Department of Clinical Sciences and Community Health, Milan University, Milan, Italy

<sup>3</sup> CRC - Center for Environmental Health, Milan University, Milan, Italy

<sup>4</sup> Centre for Cognitive Neuroscience, European Reference Network EpiCARE, Department of Neurology, Christian Doppler University Hospital, Paracelsus Medical University of Salzburg, Salzburg, Austria

<sup>5</sup> Neuroscience Institute, Christian Doppler University Hospital, Salzburg, Austria

<sup>6</sup> Institute of Neuropsychological Diagnostics and Imaging, Karl Landsteiner Institute for Neurorehabilitation and Space Neurology, Salzburg, Austria

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- The Moro reflex (MR) is a primitive reflex that disappears after the first 3 months of life.
- The head of the newborn falls abruptly backwards, with a symmetrical abduction and extensions of the arms, followed by adduction with slightly tonic arch-like movements.
- The MR is routinely elicited to evaluate the neurological status of an infant.
- The neural center underlying the MR is located in the lower part of the brain stem, as this reflex also occurs in anencephalic infants.
- The MR is a behavioral phenomenon due to the activation of an archaic neural circuit present in the newborn, the activity of which is later inhibited following brain maturation.

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- Given their semiological resemblance, infantile spasms and the tonic phase of generalized tonic-clonic seizures might be due (at least partly) to the pathological activation of the same neural archaic circuit involved in the genesis of the MR.
- Such activation could occur through either direct excitation or through an indirect ‘liberating’ mechanism, secondary to epileptic disruption of cortical inhibitory control on subcortical structures.
- The motor phenomena would therefore represent activation of subcortical central pattern generators.
- Although fascinating, these considerations regarding the similarities between these different phenomena remain speculative. Further studies are thus required to further analyze the neural substrates of the MR and its relationship with epileptic seizures.