

# Stress - another possible mechanism of neurotoxicity in neurodegenerative diseases

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**Background:** The literature associates oxidative stress with the production of free radicals, which lead to neurodegeneration. They present innumerable hypotheses, among which are abnormalities in the functioning of the hypothalamic-pituitary-adrenal axis, neurotoxic effects and neuronal oxidative damage. Clinical observation has shown that in neurodegenerative diseases such as Multiple Sclerosis (MS) and Amyotrophic Lateral Sclerosis (ALS) there is a report of prolonged or violent emotional stress preceding the symptoms. **Aims:** Using the Carillo Complex Systems Model, present some possibilities on how stress can contribute to neurodegeneration. **Methodology:** Nine cases of ALS and six cases of MS were evaluated, pathologies already classified as belonging to syphilinism. Literature review on stress and neurotoxicity carried out. **Results and discussion:** Syphilinism is an instability with a predominantly intrinsic origin to the system with a chronic character. This diathesis characterized by a dissipative deficiency, predominantly hepatic, to the processing of certain elements or potentially toxic substances with exogenous origin or endogenous. Such non-processed substances are unstable factors in the system, with greater affinity for certain tissues, like the nervous system. Among the toxins, we find alcohol, esters, formaldehyde, aloe, ketones, aldehydes, etc. The final hepatic metabolism of cortisol results in cortic acids and cortol, which use the same enzymatic system as alcohol, and can be considered syphilinic toxins. Ethanol can act directly at the circadian rhythm, disrupting it and generating stressful substances such as cortisol, regardless of an external event, increasing the toxin level. The inflammatory process generated by the production of free radicals and metabolic abnormalities, including the reduction of neuropeptide Y that modulates inflammatory activity in the nervous system, leads to changes that can result in neurodegeneration. **Conclusion:** Inflammation caused by toxins from prolonged/violent emotional stress can lead to several changes in syphilinic individuals, due to failure in the dissipative process, including neurodegeneration.

**Keywords :** Stress, neurotoxicity, Complex Systems Model, Syphilinism

## References

Carillo Junior, Romeu. Fundamentos da Homeopatia Constitucional: Homeolivos.

Carillo Junior, Romeu. O Milagre da Imperfeição. São Paulo: Cultrix, 2008.

Carillo Junior, Romeu. Homeopatia Medicina interna e Terapêutica. 2º ed. Homeolivos, 2007