Harnessing the power of anticipation to manage respiratory-related brain suffering and ensuing dyspnoea: insights from the neurobiology of the respiratory nocebo effect

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Shareable abstract (@ERSpublications)
The mere expectation of dyspnoea contributes to shape the lives of patients with chronic respiratory diseases: approaches addressing anticipatory mechanisms will provide new therapeutic avenues for persistent dyspnoea in the near future https://bit.ly/3mkv6US

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This issue of the *European Respiratory Journal* presents an elegant study describing the neurobiological basis of a respiratory nocebo effect [1]. The nocebo effect is the dark side of the placebo effect. Both terms designate a gap between an observed effect and what would be predicted on the basis of the known physiological properties of the corresponding intervention. In other words, the placebo effect consists of an unexpected or disproportionate symptomatic improvement relative to what the concerned treatment is expected to produce. For example, saline has no known physiological effect on nociception (the physiological process at the origin of pain) but can have an effect on pain (the symptom resulting from this process). On the contrary, the nocebo effect consists of the worsening or the apparition of symptoms not actually related to the administered treatment. Placebo and nocebo effects are highly contextual [2, 3]. They involve various cognitive mechanisms such as learning or social cognition, and are intimately linked to the notions of belief and anticipation [3]: the placebo component of the effect of a drug strongly depends on what is expected from this drug. Multiple brain systems and neurochemical substances are involved in the underlying neurobiological processes [3], keeping in mind that "there is not one single placebo effect, but many" [4]. Of note, the word "placebo" (and less often "nocebo") tends to be associated with the administration of a treatment. However, non-therapeutic situational stimulation can evoke (or relieve) symptoms depending on prior experience, probably *via* similar anticipatory mechanisms.