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EXHALED CARBON MONOXIDE AS A NEW POTENTIAL MARKER OF RESPIRATORY DISEASES IN CHILDREN

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Among modern methods included in the diagnostic algorithms for various diseases, analyses of expired breath and its condensate acquire increasing importance. Various markers can be determined in the exhaled air, especially volatile gaseous compounds: nitrogen oxide (NO), carbon monoxide (CO), hydrocarbons, and 8-isoprostanes. Most of CO in the body originates from the enzyme degradation of heme. The level of exhaled CO reflects the extent of activation of heme oxygenase, induced by many factors (e.g., cytokines, infections, reactive oxygen and nitrogen species, bacterial toxins). In contrast to NO, CO can serve as a marker of inflammation and oxidative stress. The representation of CO in the exhaled breath (eCO) changes in various diseases of the respiratory aand other systems. Among the respiratory diseases in which the use of the eCO measurement seems to be of benefit are bronchial asthma, airways infections, cystic fibrosis, primary ciliary dyskinesia, etc. The observation of eCO concentrations represents a modern, simple, available and a well reproducible method for the diagnosis of respiratory system disorders and for the following their progression and response to therapy.