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## 50 Years Ago in *THE JOURNAL OF PEDIATRICS*

### The Oxygen Dilemma

Auld PMA. Oxygen therapy for premature infants. *J Pediatr* 1971;78:705-9.

Oxygen toxicity was long recognized and feared among neonatologists owing to its association with retrolental fibroplasia. When Northway et al described bronchopulmonary dysplasia in 1967, oxygen toxicity was immediately suggested as a contributing factor.<sup>1</sup> At the end of the 1960s, it was therefore realized that oxygen may be toxic to organs other than the retina. These considerations are reflected in Peter Auld's commentary in *The Journal* 50 years ago. At that time, monitoring oxygenation was difficult. One common method was to titrate oxygen concentration in the incubator until cyanosis disappeared. Intermittent puncture of the temporal artery was conducted to check oxygenation levels. Transcutaneous pO<sub>2</sub> electrodes were introduced a few years later to allow continuous monitoring of oxygenation. In the following decade, pulse oximeters became available, representing another revolution. Today, we also have access to near infrared spectroscopy to assess oxygenation.

The mechanism of oxygen toxicity was not understood in 1970, and it took another decade until the concept of oxidative stress and oxygen radicals was applied to premature infants, allowing us to understand that hyperoxia is not the only factor leading to oxidative stress.<sup>2</sup>

Auld ended his commentary by pointing to the challenge of finding the right balance between providing adequate oxygenation while at the same time minimizing the possible harmful effects of oxygen toxicity. The Neoprom study testing high vs low oxygen saturation targets for immature newborn infants emphasizes that we are facing this same dilemma, 50 years after.<sup>3</sup>

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