Abstract
Wilber RL. Application of altitude/hypoxic training by elite athletes. J. Hum. Sport Exerc. Vol. 6, No. 2, pp. 271-286, 2011. At the Olympic level, differences in performance are typically less than 0.5%. This helps explain why many contemporary elite endurance athletes in summer and winter sport incorporate some form of altitude/hypoxic training within their year-round training plan, believing that it will provide the "competitive edge" to succeed at the Olympic level. The purpose of this paper is to describe the practical application of altitude/hypoxic training as utilized by elite athletes. Within the general framework of the paper, both anecdotal and scientific evidence will be presented relative to the efficacy of several contemporary altitude/hypoxic training models and devices currently used by Olympic-level athletes for the purpose of legally enhancing performance. These include the three primary altitude/hypoxic training models: 1) live high + train high (LH + TH), 2) live high + train low (LH + TL), and 3) live low + train high (LL + TH). The LH + TL model will be examined in detail and will include its various modifications: natural/terrestrial altitude, simulated altitude via nitrogen dilution or oxygen filtration, and normobaric normoxia via supplemental oxygen. A somewhat opposite approach to LH + TL is the altitude/hypoxic training strategy of LL + TH, and data regarding its efficacy will be presented. Recently, several of these altitude/hypoxic training strategies and devices underwent critical review by the World Anti-Doping Agency (WADA) for the purpose of potentially banning them as illegal performance-enhancing substances/methods. This paper will conclude with an update on the most recent statement from WADA regarding the use of simulated altitude devices.

Keywords
HYPOBARIC HYPOXIA, INTERMITTENT HYPOXIC TRAINING, LIVE HIGH-TRAIN LOW, NITROGEN DILUTION, NORMOBARIC HYPOXIA, SUPPLEMENTAL OXYGEN.