

Results 239 concussions occurred during the 3 study seasons of which 35 players were excluded for additional injuries or concussion lasted over the end of a season. 202/204 (99%) of NHL players with diagnosed concussions missed at least one game with a mean 9.2 games (SD +/- 9.6) missed. Those players that flew after suffering an mTBI missed 32.9% more games with: 10.5 (95% CI: 2.5–17.7) missed games and 26.5 days for those 99 NHL'ers (95% CI: 2.5–17.7) VS. 7.9 (95% CI: 0–16.5) games and 20.7 days for the 205 NHL'ers that did not fly; $P < .01$. Odds Ratio to miss games post concussion after air travel to no air travel: 3.8:1.

Discussion This initial report of an increased rate of recovery in terms of nearly 1/3 more games missed, for professional athletes flying commercial airlines due to likely increased concussion penumbra and lack of brain rest following mTBI. Future studies should evaluate standard 48–72 hour post mTBI brain rest, without any air flight to abate the decreased oxygen tension suffered during pressurized cabin flight.

213 IMPACT OF AIR FLIGHT ON GAMES MISSED POST CONCUSSION IN NHL PLAYERS

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Background Concussions(mTBI) occur at variable reported rates of 1–4 per 100 player games in the NHL. Hypoxia exacerbates neuronal death following mild TBI in animals and Oxygen deprivation leads to greater mitochondrial dysfunction in concussed brains. This study will evaluate the impact of mild hypoxia associated with airline travel on duration of concussion symptoms in NHL players.

Methods All NHL players with publicly reported concussions in 2010–11 through the 2012–13 (3) seasons were evaluated to determine the impact of air flight with pressurized cabins in the immediate 4–6 hour period following games in which the concussion occurred. This retrospective cohort study used publicly available post-game reports of concussion, next game played, and air distance traveled. Players with any associated injury were excluded. All available NHL and team reports were used to confirm travel night-of following an away game to either next stop of road trip (NHL) or home location and diagnosis of concussion and games missed. Only flights within 6 hours of end of game were included.