

Potential effects of drugs on divers

Prescription, over-the-counter, herbal, homeopathic, and street drugs can have known and unknown side effects that can be drug or individual specific. For individuals who dive for recreation or for work, the unique nature of the hyperbaric environment can add complexity to the side effects experienced. Changes in ambient pressure, temperature, or gas levels can lead to changes in physiological mechanisms in the body at depth or on resurfacing. As well, the diver's gas mixture, which might differ from ambient air, could be a factor. You should be aware of these potential effects on your diver patients.

In a recent WorkSafeBC case, a commercial diver, who also works in a restaurant, injured his back. Through his rehabilitation process he noted to his general practitioner that he used high levels of marijuana daily for recreation and to control his pain. In addition, he was taking synthetic opioids and NSAIDs. His family physician declared him fit to return to work without considering the diving environment in declaring fitness. Because he was unfit for diving work, the worker's certificate of medical fitness to dive was revoked by WorkSafeBC until he could demonstrate that he was no longer using marijuana or opioids, and a dive physician assessed him. (A list of

physicians with training and expertise in dive/hyperbaric medicine can be found on www.worksafebc.com.)

Several commonly used over-the-counter medications can impair a diver's ability to interact in their environment. For example:

- Antihistamines, particularly older-generation ones, can cause drowsiness and reduced secretions that could be compounded under water. Hydration is important to minimize effects of hyperbaric changes in oxygen saturation, bubble formation, and nitrogen narcosis.
- Decongestants can cause vasoconstriction leading to reduced blood flow, which can compound diving injuries. In addition, certain decongestants, including those that contain pseudoephedrine, can have a "rebound effect" resulting in reverse changes leading to problems on ascent. Others can have adrenaline-like effects that can have adverse effects on congestion.
- Anti-motion-sickness preparations can cause drowsiness.
- Analgesics and anti-inflammatories can alter hemodynamics.

Any medication that affects hydration, blood pressure, blood flow, or sedation should be avoided while diving. Consider the active half-life of any medication and, if necessary, explore alternatives. If certain medications are required to control a condition, the diver would have to forgo medical certification to dive until the

medication is no longer required.

Many cardiac, neurological, and psychiatric drugs can have a variety of effects on the surface, which can be compounded at depth. Alcohol and street drugs are strictly prohibited in diving because they can impair judgment, cognition, and alertness.

Before supporting the use of any medication by a recreation or commercial diver, please consider the condition or illness the medication is being used for; side effects that may affect consciousness or decision making, or may impair physical or mental function; and the complex relationship between medications, drugs, the individual, and the individual's environment. Also, please test the medication on land and under controlled conditions to ensure that no undesired or potentially dangerous side effects occur. Counsel diver patients that using any form of recreational or street drug is contraindicated in diving.

For more information

If you are ever concerned about a medication or medical condition that may affect a patient working as a diver or an individual's ability to dive safely, please consult one of the dive physicians listed on www.worksafebc.com, a medical advisor in your nearest WorkSafeBC office, or Dr Steve Martin at Steve.Martin@worksafebc.com or 250 704-4226.

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This article is the opinion of WorkSafeBC and has not been peer reviewed by the BCMJ Editorial Board.

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