

Women and Diving

Part 2 – The Menstrual Cycle & the Contraceptive “Pill”

By Dr. Lynn Taylor

The next three articles will discuss possible concerns for female divers, starting here with discussing the potential ‘risks’ associated with the different phases of the menstrual cycle and taking the contraceptive pill. Future articles will review diving during pregnancy and the controversial question of gender and the risk of decompression illness.

One obvious difference between female and male divers – the menstrual cycle:

As much as women may want to be seen as equal to men, there are some inevitable physiological differences which can influence their diving and the majority of this series of articles focus on some of the issues which specifically affect women divers. This article aims to provide answers to the most commonly asked questions relating to the menstrual cycle and the contraceptive “pill”.

Are women at an increased risk of shark attacks during menstruation?

This is a question which diving instructors are frequently asked by female divers, or their concerned partners, and it is one of the most frequently asked questions on the Divers Alert Network website. In reality, the average blood lost during menstruation is so small amounting to just a few mls per dive (50-150 mls occurring over several days) that

the loss is insignificant. With the use of tampons, there is no external blood loss anyway. Also, it is known

many shark species are not attracted to the blood and other debris found in menstrual flow and Dr Carl Edmonds has even speculated that this may be due to a repellent effect of some component in menstrual blood. In reality, the chance of being attacked during your menstrual period is probably far less than from activities such as spear-fishing. There are few reported shark attacks on women, and there are no data to support the belief that menstruating females are at an increased risk for shark attacks.

Before my ‘period’ I suffer from Pre-Menstrual Syndrome (PMS) does this affect my diving?

Interestingly, one large survey of over a thousand women divers has revealed that 7% of women chose to refrain from diving whilst they were menstruating and 12% said they dived more conservatively. In this survey a high proportion of women almost three-quarters, reported that they do sometimes get PMS symptoms. Their self-perception was that they feel more tired, felt colder, had impaired reaction times, experienced more anxiety, felt more susceptible to nitrogen narcosis and felt less in control.



Whilst there is no strong scientific evidence, that women are more susceptible to decompression illness or dive injuries/accidents during this time, research has shown that accidents in general are more common among women during PMS. Sensible advice would appear to be - if you are notably affected by these symptoms, take extra care in diving and dive more conservatively than you would do normally.

I have heard that I am more likely to get Decompression Illness (DCI) at certain times of the menstrual cycle – is that true?

The hormonal changes over the cycle can result in fluid retention and tissue swelling. Theoretically, this could affect tissue gas exchange behavior, effectively making it a ‘slower’ tissue; however, this theory is *not* proven in practice.

Early research on this topic looked at the relationship between the incidence of altitude chamber decompression sickness in female chamber attendants at the US Air Force School of Aerospace Medicine and phase of the menstrual cycle¹. The researchers concluded “Women are at higher risk of developing altitude related DCI during menstruation, with the risk

decreasing linearly as the time since last menstrual period (LMP) increases”. The study was limited by not being able to look at other factors such as the influence of the oral contraceptives. Interesting findings but clearly, care must also be taken regarding the relevance of extrapolating these observations in altitude chamber attendants, to divers in the underwater environment.

As far as data in women divers are concerned, a group of researchers based in Plymouth, UK, coordinated the completion of a questionnaire by women who were treated with hyperbaric therapy for symptoms of DCI. Twenty-three hyperbaric treatment centres worldwide participated in the study, including two in Australia and one in New Zealand. They also concluded “the incidence of DCI in women is influenced by the phase of the menstrual cycle. Incidence is greatest during the early phase of the cycle [ie: menstruation] and lowest around the 3rd week of the cycle”.

What effect does the oral contraceptive “pill” have on the risk of DCI ?

One recent retrospective review of women divers (956 divers) with DCI found 38 percent were menstruating at the time of their injury. Additionally, 85 percent of those taking oral contraceptives were menstruating at the time of the accident. This suggests, but does not prove, that women taking oral contraceptives are at increased risk of decompression illness during menstruation.

What could the possible mechanism be? Oral contraceptives have been associated with an increase in blood pressure and an increased risk of thromboembolic disorders (development of clot-like vein occlusions, which can lead to an emboli), especially in women over 35 years. However, unless oral contraceptives pose a clinical problem for individual women, there is still no strong data to suggest that their use during recreational scuba diving is a contraindication.

SUMMARY

- There is no evidence that women are more prone to shark attacks whilst menstruating.
- It may be prudent for women to dive ‘more conservatively’ and carefully if they suffer from Pre Menstrual Syndrome.
- The limited data we have so far suggests it may be advisable for menstruating women to consider diving ‘more conservatively’* during menstruation, particularly if they are taking oral contraceptives.

*Diving ‘more conservatively’ could involve making fewer dives, shorter and shallower dives and making longer safety stops.

For further information on medical issues in diving, visit the DAN SEAP website (www.danseap.org) or the DAN America website (www.diversalertnetwork.org). If you have specific concerns, I advise you to consult with a doctor who has had specialist training in diving and hyperbaric medicine. A list of doctors who have diving medicine qualifications from the South Pacific Underwater Medicine Society can be found on the SPUMS website (www.spums.org.au). □

ABOUT THE AUTHOR

Lynn Taylor PhD, is a very keen technical diver and prolific writer. She is a DAN Oxygen Instructor, PADI dive instructor, coordinator of DAN SEAP-NZ, and Dive Incident & Accident Recorder for NZUA.



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