

# **DOES B VITAMIN SUPPLEMENTATION INCREASE SURVIVAL OR WEIGHT GAIN IN STRANDED CALIFORNIA SEA LIONS?**

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## **ABSTRACT**

When pinnipeds enter a rehabilitation facility, they have often fasted for an unknown period of time and are nutritionally deficient. They often are then fed dead fish. Certain species of fish are deficient in vitamin B1, or thiamine, as they contain thiaminases, enzymes which break down this vitamin after the fish have died. Deficiencies in these vitamins can result in neurological deficits and death. Mild deficiencies result in weight loss, confusion and failure to thrive.

Young California sea lions were either given vitamin B supplementation or were not. Comparisons were made in survival, weight gain during rehabilitation, and duration of stay. Plasma was collected when possible, and laboratory results for plasma thiamine levels were compared.

Our objective was to provide evidence that B vitamin supplementation results in some measurable benefit for sea lions in rehabilitation.

No differences in survival, weight gain, or length of stay were observed in animals that received B vitamin supplementation versus those that did not. No difference in plasma thiamine was observed between animals who received supplementation and those who did not - in fact, many animals had thiamine levels below that which was detectable by the laboratory. The lack of difference between supplemented and non-supplemented animals may be due to 1) small number of animals studied, 2) other factors being more influential on survival or weight gain, 3) plasma thiamine levels too low to be detected or the specific test not biologically relevant, or 4) insufficient supplementation.

Geraci demonstrated that harp seals died when fed a diet of herring or smelts for an extended period of time (Geraci, 1972). These species of fish are deficient in thiamine (or rich in thiaminases). In that experiment, seals recovered from clinical signs of disease when supplemented with thiamine. Death or severe clinical signs which resolve upon supplementation are evidence for changes with B vitamin deficiencies.

All animals in this study were fed dead fish. It is important to note that the questions asked in this study are relevant to animals in rehabilitation facilities, but cannot be extrapolated to animals in the wild.

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## **REFERENCES**

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