

Example of essay on biology forms and functions

[Environment](#), [Animals](#)



Introduction

The diving capability on a breath-hold in both human and marine mammals is determined by the gas exchange, in both peripheral tissues and in the lung. The end products of these adaptations involve improved oxygen storage, efficient ventilation, pressure tolerance and delivery of respiratory gases. Due to some of these adaptations human is less advantageous in diving than marine animals. For instance, a whale can hold breath for over 120 minutes while human can hold for a maximum of 7 minutes.

Another adaptation that is involved in diving adaptation includes the ratio of size of the lungs to the animal's total mass. Small lungs are an effective adaptation of diving. Human lungs are approximated to be 1.75% of its total mass, while the ratio of a whale is 0.73% of its body mass. Noticeably, pressure in water, which rises with depth, constricts air in the lungs resulting to stress in rib cage and tissues. Marine animals are capable of reducing greater volume of air filled in the lungs while diving thus reducing the stress.

The problem that is encountered in diving is the capability of having enough oxygen when diving. Whale for example adapts by slowing down heart rate and hence their blood supplies oxygen in only brain and essential organs. They are also capable of adjusting their metabolic activities and hence decrease temperatures hence conserving more oxygen.

In conclusion, gas exchange in both peripheral tissue and lung is the fundamental to the diving capability of diving and hence effectively exploit and scavenge ocean depths.

Work cited

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