



RESPIRATION TRENDS OF BOTTLENOSE DOLPHIN CALVES FROM BIRTH THROUGHOUT THE FIRST 6 MONTHS OF LIFE

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INTRODUCTION

Bottlenose dolphin calves, soon after the birth, start learning how to strengthen the crucial link with their mothers, incrementing their locomotory ability and developing breathing and diving skills. Aim of this study was to monitor the respiratory activity of four healthy *Tursiops truncatus* calves, in order to identify breathing trends useful for newborns' healthiness diagnosis.

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|-------------|-------------|--------------|-------------|
| | | | |
| LUNA | BLUE | ROCCO | LAPO |
| Female | Female | Male | Male |
| 12 May 1995 | 29 Jun 1997 | 27 Sep 2003 | 28 Jul 2007 |

METHODS

The neonates, two males and two females, born in different periods at the Rimini Delfinario, were systematically observed throughout their first 26 weeks of life. Respiratory parameters were collected reaching a total of 1150 sessions lasting 15 minutes each (total 285 hours of observation).

RESULTS AND CONCLUSIONS

FIGURE 1: As for apnea duration - intended as the exact time elapsing between two consecutive openings of the blowhole - the results showed a gradual decrement of the values after the birth. The mean apnea duration shifted, in fact, from 28 sec. in the first neonatal week to a predominant interval of 20-25 sec. in the following periods.

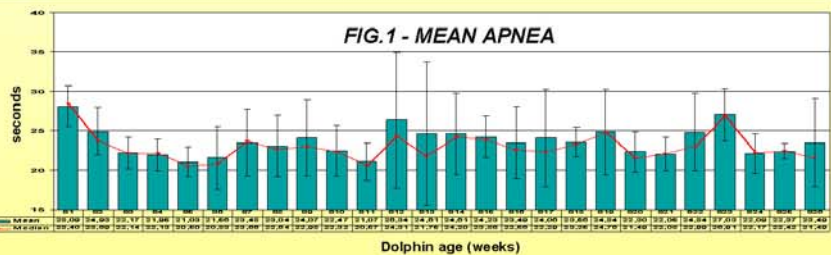
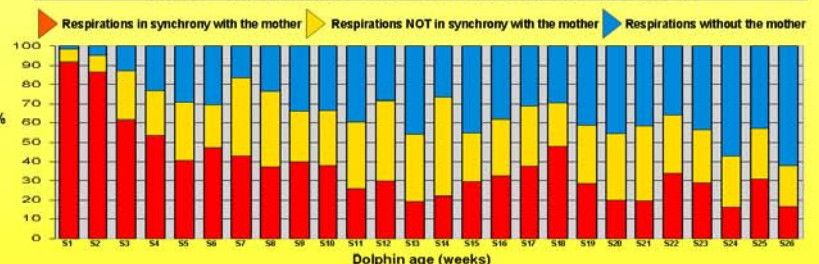


FIGURE 2: Throughout all the semester, the average of maximum extension of apneas never went below 1 minute and 40 seconds. At the same time, the highest point of 123 seconds, was reached only after three months from birth.



FIGURE 3: Calves revealed needing a strict breathing synchrony with the mother in particular during the first two weeks of life when more than 80% of respirations occurred simultaneously with her. Successively, a firm decrement of this parameter appeared, underlining how, even from a respiratory point of view, in the youngest stages of life a biologically correct relationship with parents appears essential for the survival of calves and for the developmental changes leading them to maturity.

FIG. 3 - BREATHING SYNCHRONY WITH THE MOTHER



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