

## **A06. Signature whistle development in bottlenose dolphins**

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Bottlenose dolphins (*Tursiops truncatus*) use whistles with an individually distinctive frequency modulation to broadcast their identity. These so called “signature whistles” are mainly produced when an individual is isolated or when a group is reunited. Dolphins are also capable of matching the signature whistles of conspecifics and show long term social memory for the whistles of known individuals. Previous studies reported the dolphin calves develop their signature whistle within the first months of their life and are suspected to adopt whistle parameters based on maximum difference to the mother’s signature whistle. However, it remains unclear how and when exactly young dolphins adopt their signature whistle, and which factors influence their respective whistle parameters (e.g. number of loops, frequency modulation). This study aims at describing the process of vocal learning and signature whistle development in seven infants from four different facilities by analysing recordings from their day of birth up to an age of 3 months. We found that early whistles often had noisy side bands and that whistle rates were high in initial recording sessions with up to 45 whistles per min, but decreased to as few as 12 whistles per min in later sessions. Peak frequency and duration of whistles increased with age, and the final signature whistle frequency modulation pattern emerged as early as 1 month after birth, but in one animal took more than 3 months to develop. Contrary to existing literature, two dolphins developed signature whistles that closely resemble their mothers’ whistles. Future comparisons with the acoustic parameters from the whistle repertoire in the social group are needed to investigate the role of vocal learning in signature whistle development.