

Ground scratching and preferred leg use in the domestic chicks: changes in motor control in the first two weeks post-hatching

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Lateralisation of a variety of visual functions: food discrimination, fear response, copulation, performance of topographical and other tasks, such as olfactory and auditory functions, have been described in the domestic chicks, *Gallus gallus domesticus*. A bias to the left hemisphere control on day 8 and to the right on day 11 has also been demonstrated in the domestic chick. In this study we show that motor control as to the foot preference in initiating a scratching bout and tape removing task is lateralised in both adults and chicks. There was a preference for the right leg to initiate a bout of ground scratching in both male and females adult birds. Secondly, foot preference is also affected by the changes in shifts of bias on day 8 and 11. The right leg preference of initiating a ground scratching bout observed on day 5 is reversed to a left leg preference on day 8. This change then resumes the right leg preference after day 11. Hence it is postulated that the hemisphere that is not activated due to the bias of age controls the first leg to be used in initiating routine movements such as ground scratching. For the tape removing task the right leg was used to remove a tape adhered to the beak of the chick for the trained group on day 8; but there was no preference in the naïve group. Similarly, on day 11 a left foot bias was observed for the trained group and right foot bias for the naïve group. To remove a tape the activated hemisphere on days of bias is used; whereas in a novel situation the foot use is reversed. Thus, footedness is affected by the age, type of task and changing hemispheric dominance.