# Tactile coding on the fingers and toes: insights from double simultaneous stimulation across limbs

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It has been shown the existence of representational stages of touch that distinguish between body-regions more than body-sides with different interactions between homologous compared to non-homologous fingers of the two sides of the body. However, it is unknown whether such interactions are also present across different limbs that are morphologically similar such as hands and feet. Here, we investigated the effect of tactile double simultaneous stimulation (DSS) between the fingers and toes to explore the within between limbs interactions of touch. Participants were instructed to perform a go/no-go task to detect a tactile stimulus on a target digit (e.g., left index) in isolation or with a simultaneous stimulus distractor on a non-target digit, either on the hand (e.g., left middle) or on another limb (e.g., left big toe = homologous; left second toe = non-homologous). In different blocks the target digit could be a digit on the left hand (i.e., index finger, middle finger) or on the left foot (i.e., big toe, second toe). Results show that the DSS interference is reduced when homologous digits are stimulated on different limbs. However, this pattern is more prominent when the target is presented on the hand compared to the foot.