



Your Smell Sensitivity Affects Your Social Network Size

The power of smell has been recognized since the ancient times, but it is not until most recently that people became interested in exploring the scientific basis of odor, its underlying neural mechanism, and its potential impact on someone's social communication ability.

Recent structural imaging studies have suggested that larger social network size is associated with increased grey matter volume in human, especially in the amygdala, the anterior cingulate and the orbitofrontal cortex. However, there have been very few carefully planned neuroanatomical studies on how olfaction affects people's social network size, and none of these has extended beyond a descriptive characterization at the gross neuroanatomical level.

Dr. CHAN Raymond from the CAS Institute of Psychology in Beijing has conducted a study to specifically examine whether there is an association between olfactory sensitivity and social network size in healthy volunteers, and to identify any common neurobiological basis. His group administered the Sniffin' Stick Test to 31 healthy volunteers to examine their olfactory function and sensitivity. The Sniffin' Sticks Test was specifically designed to assess olfactory identification, discrimination and sensitivity. Moreover, the participants underwent

structural and functional imaging scans. All the participants were also required to complete a checklist to estimate their social network size.

The findings showed that there was a significant correlation between the size of an individual's social network and their olfactory sensitivity. More importantly, it was found that the strength of the amygdala-orbitofrontal functional connectivity was significantly associated with olfactory sensitivity and social network size. These findings highlight the important role of olfaction in human social network size and its neurobiological basis. Given that olfactory dysfunction has been commonly observed in a wide

range of neuropsychiatric disorders such as schizophrenia and dementia, the present findings shed light on the potential relationship between olfaction and the interpersonal and social dysfunctions in these clinical populations.

This study, published online by *Scientific Reports*, was conducted by ZOU Laiquan (doctoral student) under the supervision of Dr. CHAN Raymond. The study was supported by the Strategic Priority Research Program (B) of the Chinese Academy of Sciences, the National Natural Science Foundation of China, and the Beijing Training Project for Leading Talents in Science & Technology.

