

# Kocher-Monro trajectory

The **Kocher-Monro** trajectory to the cerebral **ventricular system** represents one of the most common **surgical procedures** in the field of **neurosurgery**. Several studies have analyzed the specific **white matter disruption** produced during this **intervention**, which has no reported adverse neurological **outcomes**. In a study by Pascual-Diaz et al., a graph-theoretical approach was applied to quantify the structural alterations in whole-brain level connectivity. To this end, 132 subjects were **randomly** selected from the **Human Connectome Project dataset** and used to create 3 independent 44 subjects groups. Two of the groups underwent a simulated left/right Kocher-Monro trajectory and the third was kept as a control group. For the right Kocher-Monro approach, the nodal analysis revealed decreased strength in the anterior **cingulate gyrus** of the transected hemisphere. The network-based statistic analysis revealed a set of right-lateralized subnetworks with decreased **connectivity** strength that is consistent with a subset of the **Default Mode Network**, **Salience Network**, and Cingulo-Opercular Network. These findings could allow for a better understanding of structural alterations caused by Kocher-Monro approaches that could reveal previously undetected clinical alterations and inform the process of designing safer and less invasive cerebral **ventricular** approaches <sup>1)</sup>.

<sup>1)</sup>

Pascual-Diaz S, Pineda J, Serra L, Varriano F, Prats-Galino A. Default Mode Network structural alterations in Kocher-Monro trajectory white matter transection: A 3 and 7 tesla simulation modeling approach. PLoS One. 2019 Nov 7;14(11):e0224598. doi: 10.1371/journal.pone.0224598. eCollection 2019. PubMed PMID: 31697747.

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