S1. Search strategy syntax

PubMed:

	Keywords and MeSh terms for Transcranial Electrical Stimulation
#1	“non-invasive brain stimulation”[Title/Abstract] OR "transcranial direct current stimulation"[Title/Abstract] OR “transcranial alternating current stimulation”[Title/Abstract] OR tdcs[Title/Abstract] OR tacs[Title/Abstract] OR neuromodulation[Title/Abstract] OR "transcranial electrical stimulation"[Title/Abstract] OR "Transcranial Direct Current Stimulation"[Mesh]
	Keywords and MeSh terms for gambling and gaming behaviours
#2	gambl*[Title/Abstract] OR "video game*"[Title/Abstract] OR gaming [Title/Abstract] OR “risk taking” [Title/Abstract] OR “decision making” [Title/Abstract] OR impulsivity[Title/Abstract] OR BART[Title/Abstract] OR "Behavior, Addictive"[Mesh] OR "Internet Addiction Disorder"[Mesh] OR "Technology Addiction"[Mesh] OR "Gambling"[Mesh]
#3	#1 AND #2 NOT ("Animals"[Mesh] NOT "Humans"[Mesh])

Scopus:

TITLE-ABS(“non-invasive brain stimulation” OR "transcranial direct current stimulation" OR “transcranial alternating current stimulation” OR tdcs OR tacs OR neuromodulation OR "transcranial electrical stimulation") AND TITLE-ABS(gambl* OR "video game*" OR gaming OR “risk taking” OR “decision making” OR impulsivity OR BART) AND (EXCLUDE (EXACTKEYWORD , "Animals") OR EXCLUDE (EXACTKEYWORD , "Animal") OR EXCLUDE (EXACTKEYWORD , "Animal Experiment")) AND (LIMIT-TO (SRCTYPE , "j"))

Web of Science:

(TS=("non-invasive brain stimulation" OR "transcranial direct current stimulation" OR "transcranial alternating current stimulation" OR tdcs OR tacs OR neuromodulation OR "transcranial electrical stimulation")) AND TS=(gambl* OR "video game*" OR gaming OR "risk taking" OR "decision making" OR impulsivity OR BART)

Refined by: Document type – articles, Research areas – Psychology or Neurosciences Neurology or Psychiatry or Behavioural Sciences or Substance abuse.

Link: https://www.webofscience.com/wos/woscc/summary/112ba9dc-4a18-4375-84b3-a215760f1ce8-689f85e8/relevance/1

S2. Risk of Bias assessment for each of the included studies

The image was generated using Robvis visualization tool