Paradigm shift in treatment of addiction holds promise, thanks to epigenetics

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"We inherit our genes from our parents and these genes remain fixed throughout our life and are passed on to our children; we can do very little to change adverse genetics changes that we inherit," says Moshe Szyf, a professor in the Faculty of Medicine at McGill, "In contrast, epigenetic marks such as DNA methylation act as switches and dimmers of genes- they can be switched on, off, or dimmed - by epigenetic drugs inhibiting DNA methylation and removing methyl marks from these genes."

"We discovered that injecting the drug RG108 just before the animals were exposed to the light cue after the long withdrawal not only stopped the addictive behavior of the animals, it also lasted for a longer period. This suggests that a single treatment with RG108 could reverse or perhaps cure drug addiction," adds Szyf.

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Current treatments might aggravate rather than
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"The mainstay of current approaches to treating addiction might actually aggravate it," says Yadid. "Our research suggests that because the changes in addiction involve numerous genes, our current approaches will continue to fail if we target one or few targets in the brain, but more research is needed to confirm if these new avenues hold promise."


Provided by McGill University


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