

Epigenetics might explain relapse in patients of substance addiction

One of the major challenges of cocaine addiction is the high rate of relapse after periods of withdrawal and abstinence. But new research reveals that changes in our DNA during drug withdrawal may offer promising ways of developing more effective treatments for addiction.

Withdrawal from [drug](#) use results in reprogramming of the [genes](#) in the brain that lead to addictive personality, say researchers from McGill University and Bar Ilan University in a new study published in the Journal of Neuroscience.

“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.”

“Surprisingly, we discovered that the biggest changes in DNA methylation occurred not during the exposure to the drug but during withdrawal,” says co-author Gal Yadid, of Bar Ilan University, “During this period of withdrawal, hundreds of genes changed their state of DNA methylation including genes that were known before to be involved in addiction”.

This research may point to new avenues for treatment of addiction in humans.

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis. Read full, original post: [Paradigm shift in treatment of addiction holds promise, thanks to epigenetics](#)