Theme: Psychiatric Genetics

F1.1

Epigenetics For Scared Psychiatrists

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Epigenetics will be as important as the theory of evolution and the discovery of DNA. But, as busy clinical psychiatrists we have not been taught the basics, so the topic is scary. In this presentation we plan to share the limited amount we have been able to learn.

We present a description rather than a definition - Epigenetics refers to molecular modifications of genetic material which result in changes [increases or decreases] in the expression of genes – importantly, there is no modification of the DNA code. These modifications may be transmitted across cell division and even generations.

Three main mechanism will be discussed. The genome is very long and must be tightly packed to fit into the nucleus. To help with this packing, DNA is wrapped around clumps of proteins (histones) which have protruding amino acid tails.

When DNA is tightly packed it cannot be accessed for transcription – therefore the genes are ‘silent’.

Two methods unpack (relax) DNA. One is methylation of DNA, the other is methylation (or some other molecular modification, such as acetylation) of histone tails. A third epigenetic mechanism involves the actions of microRNA – which destroys or incapacitates mRNA.

Epigenetics explains the molecular mechanisms by which good mothering produces calm offspring who are not excessively distressed by stress – who are then, themselves, good mothers. It also suggests a molecular mechanism to explain PTSD and Drug Addiction, and new ways of considering schizophrenia and mood disorders.

Theme: Substance & Addiction

F1.2

Weight, Food Addiction and Quitting Smoking

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Introduction: The risk of weight gain following quitting smoking has been reported in both males and females as a reason to continue smoking, although researched more in females. Weight gain post-cessation could be due to nicotine withdrawal as nicotine is both a stimulant and appetite suppressant. Another reason postulated has been the role of switching of addictions, from nicotine to food. The validity of food addiction as a diagnostic and research entity has grown in recent times. This study aimed to investigate the role of smoking cessation on weight in smokers quitting through a smoking cessation program in Christchurch.

Methods: The study population was recruited in Christchurch from 2010-2011. All participants were part of the Smoking Cessation, Mood and Eating study (SCeMES). The SCeMES was a sequential mixed method study. A total of 256 participants were recruited for the SCeMES and participated in the quantitative study, 25 of these participants also participated in the qualitative study. Two following time points were used, EARLY at 3 months and LATE at one year.

Results: Weight of 1.3kg and 5.1kg was found at 3 months and 1 year respectively. Those who were abstinent were found to be heavier compared to those still smoking at the time of follow-up. However, this study found no increase in craving for food at follow-up. The incidence of food addiction was negligible at both EARLY and LATE follow-up.

Discussion and Conclusions: Weight gain in this study was similar to other studies. However, an unexpected finding was a decrease in craving and consumption of energy dense food in those who remained in the study irrespective of smoking status and no increase in food addiction diagnosis found to explain the weight gain. In conclusion, reasons for weight gain post-cessation is complex and requires further study.