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<https://reachmd.com/programs/focus-on-nutrition-and-nutrition-science/substance-abuse-obesity-and-bipolar-disorder/3638/>

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## Substance Abuse, Obesity, and Bipolar Disorder

### RELATIONSHIP BETWEEN SUBSTANCE ABUSE AND OBESITY AND BIPOLAR DISORDER

Substance abuse, obesity, and bipolar disorder are major public health problems. They frequently co-occur, but what is the relationship between substance abuse and obesity and bipolar disorder. Welcome to the Clinician's Round Table.

I am Dr. Leslie Lundt, your host and with me today is Dr. Roger McIntyre. Dr. McIntyre is currently an Associate Professor of Psychiatry and Pharmacology at the University of Toronto and he heads the Mood Disorders Psychopharmacology Unit at the University Health Network in Toronto.

### DR. LESLIE LUNDT:

Welcome to ReachMD, Roger.

**DR. ROGER MCINTYRE:**

Thank you for having me Leslie.

**DR. LESLIE LUNDT:**

Roger, why is this issue of substance abuse, obesity, and bipolar disorder so important to study?

**DR. ROGER MCINTYRE:**

It is so important because all 3 conditions are, in fact, public health problems right across North American, and in fact in other industrialized nations. We know that the rates of overweight and obesity are staggering and are increasing. We know that the rates of substance use disorders have been variably reported, but taken together are significant in our population and bipolar disorder affects between 3% and 5%. So, here we have 3 separate phenotypes that are of public health importance and all 3 seem to find points of pathophysiological commonality.

**DR. LESLIE LUNDT:**

And you have been studying this, correct?

**DR. ROGER MCINTYRE:**

We have been. We have been particularly interested in looking at rates of overweight and obesity and bipolar in trying to determine what are the mediators <\_\_\_\_> moderators of that association. There has been a compelling body of literature that extends well over a decade or two that describes substance use disorders differentially affecting individuals with bipolar spectrum conditions. Hitherto there has been relatively little that has tried to draw these 2 areas together in the bipolar or the mood disorder general population. In our group in Toronto along with some colleagues with Statistics Canada have actually looked at a possible association suggesting common biological <\_\_\_\_>.

**DR. LESLIE LUNDT:**

Doesn't it get complicated though, I mean I am thinking that the use of psychotropic medications

certainly can affect the rates of obesity, such as antipsychotics promoting weight gain. How do you sort out all these variables?

**DR. ROGER MCINTYRE:**

You are right that many medications that we prescribe for bipolar disorder are capable of, yes, inducing excess weight and obesity and interestingly enough many medications that we prescribe for bipolar symptomatology also have an additional benefit in reducing cravings and using many drugs of abuse, and so that is one possible explanation to this relationship. What is particularly interesting though, is that we have learned through a host of different studies that individuals who have bipolar disorder have very, very high rates of overweight and obesity and there is a large literature supporting that and what is interesting is that just during the last, I guess you could say, 10 years or so, there has been a re-conceptualization of overweight and obesity as possibly a form of addiction and when 1 actually thinks about addiction, I do not think obesity is what comes to mind, they would be thinking of street drugs and alcohol has been also reported typical substances of misuse. But, the defining characteristic of addiction is the overpowering motivational strength and decreased ability to control the desire to obtain the substance despite significant consequences and economic or interpersonal obligation ways. So you think about it when somebody is actually overweight or obese, that person is continuing to use the substance that is food, so obesity is being viewed as a consequence of an addictive behavior, someone is foraging for food, they are ingesting food despite the fact that they have these catastrophic consequences. There was a wonderful editorial that was published last year in American Journal of Psychiatry, <\_\_\_\_> NIH who put forth I think a very provocative yet very thoughtful editorial issuing this question and that is that should obesity be included as a brain disorder in the next iteration of DSM to DSM 5, which I think is a provocative statement bringing our attention to this whole issue of this behavior and consequence of being related to addiction.

**DR. ROGER MCINTYRE:**

So, what have you found so far in your work?

**DR. LESLIE LUNDT:**

So far, what we found is in many ways a corroboration of other lines of evidence what we have done as we have taken a cross-national epidemiological sample of almost 38,000 Canadians who participated

in the community-based survey looking at mood disorders in our population as well as issues around comorbidity. The corroboration was is that bipolar disorder is common in Canada between 2% and 3%, which converges with other lines of evidence in United States and some European countries. We found that there was high rates of overweight and obesity. We found very high rates of substances use. So far I would consider all of that really corroboration. Where we think we extended this discussion in a very theoretical way and certainly that is highly conjectural is that what we found was that there was an inverse relationship between overweight obesity and substance use disorders. In other words, amongst the individuals across this country who screen positive for bipolar disorder, if they also, in fact, are overweight or obese, they are less likely to report a history or current use of substance use disorder. Said another way is that if in fact, somebody is using a lot drugs, a lot of illicit substances, they are more likely to report normal weight or in fact being underweight. So, we are looking for more broad based, but also specific factors that sort of mediate or moderate dissociation of this co-variation between these 2 conditions substance abuse and obesity and it is interesting that they seem to be in inverse relationship and what is interestingly lastly is that when you actually look at general population surveys that have attempted to look at relationships amongst you know