Molecular Psychiatry: Long-term depression linked to socioeconomic position

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Long-term depression trajectories may follow a socioeconomic gradient, according to a 13-year follow-up to the GAZEL cohort study, published online this week in Molecular Psychiatry. The research suggests that efforts to reduce the burden of depression should address the mental health needs of the whole population rather than focusing exclusively on high-risk groups.

Previous research has suggested that individuals with low socioeconomic position have high rates of depression but it has remained unclear whether this reflects a higher incidence or a longer persistence of the disorder. Using multinomial regression, Maria Melchior and colleagues analyzed longitudinal depression trajectories for 12,650 individuals from the GAZEL cohort, an
ongoing epidemiological study of employees of France’s national gas and electricity company, set up in 1989.

Depression levels and socioeconomic position were assessed using the Center for Epidemiological Studies-Depression (CES-D) scale and by occupational grade respectively. The variables examined included: year of birth, marital status, tobacco smoking, alcohol consumption, body mass index, negative life events, and pre-existing psychological and non-psychological health problems.

The authors found that participants in intermediate and low occupational grades were up to 4.5 times more likely than those in high grades to experience persistent depression. Demographic factors, health behaviours, negative life events and pre-existing health problems accounted for up to 59% of the observed socioeconomic gradient in depression; however, socioeconomic position remained predictive of long-term risk of persistent depression.

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Cell Research: Role for plant miRNAs in mammalian physiology
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Plant microRNAs (miRNAs) contained in food can enter mammalian blood and tissues where they can then regulate the host’s genes and thus its physiology, according to research published online this week in Cell Research.

Chen-Yu Zhang and colleagues show that plant miRNAs can pass through the gastrointestinal tract in mice, remaining intact and functional. The miRNAs can then enter the circulatory system or various organs, such as the liver, where they can regulate the expression of specific target genes in the mouse. For example, they demonstrate that a plant-derived miRNA could inhibit the expression of a low-density lipoprotein (LDL, or “bad” cholesterol) receptor adaptor protein in the liver and consequently decrease LDL removal from mouse plasma.

The group find that, with their robust stability and highly conserved sequences, secreted miRNAs can act in a cross-species and cross-kingdom manner. These miRNAs may, therefore, represent a new class of universal modulators that mediate animal-plant interactions at the molecular level. Although further work is needed, their findings may have far-reaching implications to human health and metabolism as the plant miRNAs may represent essential functional molecules in food and also provide a novel therapeutic strategy for the treatment of diseases.

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