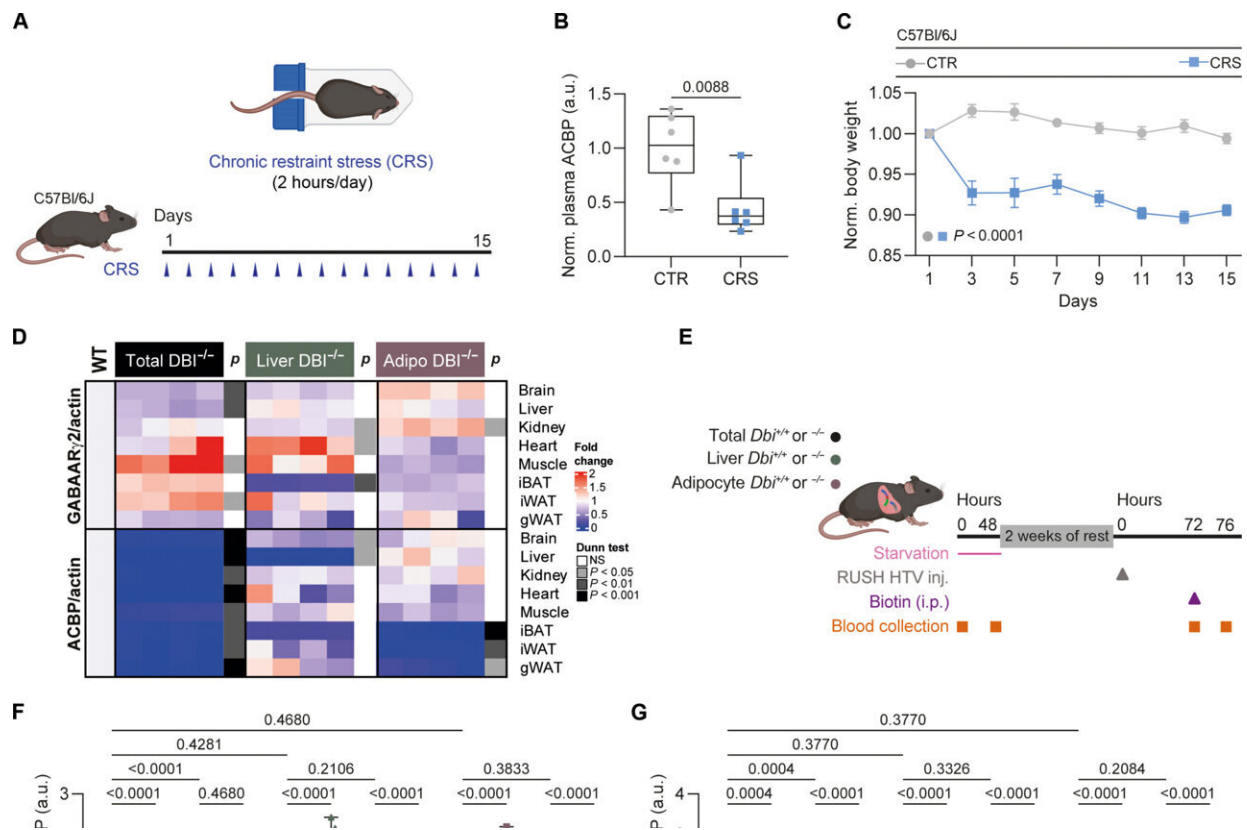


Giving the peptide ACBP to anorexic mice stimulates eating

August 15 2024, by Bob Yirka



ACBP/DBI concentrations decreased in anorexia mice and various *Acbp* knockout mice. Credit: *Science Translational Medicine* (2024). DOI: 10.1126/scitranslmed.adl0715

A large, multi-institutional team of medical researchers reports that giving anorexic mice the peptide ACBP stimulated eating. In their [paper](#)

published in the journal *Science Translational Medicine*, the group describes their study of the binding protein and its role in stimulating hunger in mice.

Anorexia nervosa is an [eating disorder](#) in which a person consumes less food than is needed. It is most well known as a disorder that arises when a person fears gaining weight, sometimes due to body dysmorphia.

But the disorder can also come about for other reasons, such as stress that leads to a lack of appetite. Patients receiving chemotherapy also often lose their appetite. In this new study, the research team wondered if it might be possible to restore the desire to eat.

They focused their effort on the binding protein acyl-coenzyme (ACBP) which is known to stimulate hunger via interactions with certain brain neurons. Prior research has shown that people with [anorexia](#) tend to have lower levels in their bloodstream—some research has also found associations between ACBP levels and hunger stimulation.

The researchers analyzed [patient records](#) for people hospitalized for anorexia, all of whom exhibited lower-than-normal levels of ACBP, a finding that could explain the high level of relapse with the disorder.

Because ACBP is only released into the body as cells break down, the research team had to find another way to get anorexic mice to begin producing more of it naturally. They genetically engineered their [liver cells](#) to produce ACBP when exposed to biotin—some of the mice were then made anorexic by subjecting them to stress, others by giving them chemotherapy drugs.

After inducing anorexia symptoms, the team gave the mice biotin to up their levels of ACBP, which overcame the stress and chemo drugs, allowing the [mice](#) to feel hungry and begin eating. The researchers also

found that the added ACBP muted the activity of melanocortin 4 receptors in the hypothalamus, which are known to play a role in appetite suppression.

More information: Hui Chen et al, Acyl-CoA binding protein for the experimental treatment of anorexia, *Science Translational Medicine* (2024). [DOI: 10.1126/scitranslmed.adl0715](https://doi.org/10.1126/scitranslmed.adl0715)

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