Metformin and Immunity

June 3, 2009 By Paul Dalton

The story here suggests that the diabetes drug metformin might strengthen the immune response to vaccines.

The study was not done in humans, and its findings are very preliminary. The idea here is quite interesting. When the immune system responds to an antigen (foreign protein) it produces large numbers of activated antigen specific T Cells. This happens whether the antigen is pathogenic (disease causing), or not (like a vaccine). Later most of those cells die off, leaving a sub set behind called 'memory T Cells' which are primed to rapidly respond the next time the body encounters that antigen.

One of the differences between the short lived and memory cells is what they use primarily for fuel: activated cells use glucose (sugar) as their primary fuel, while memory cells use fat. Metformin helps cells use fat for fuel. The thinking is that when given along side an immunization, or perhaps with some cancer treatments, metformin might lead to higher numbers of memory cells, leading to a stronger immune response.

This is a proof of concept study and nothing more. It does not show that this approach works in humans- not by a long shot. It does suggest a biologically plausible mechanism worth further study.

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http://beta.docker.poz.com/blog/study-on-metformin-a