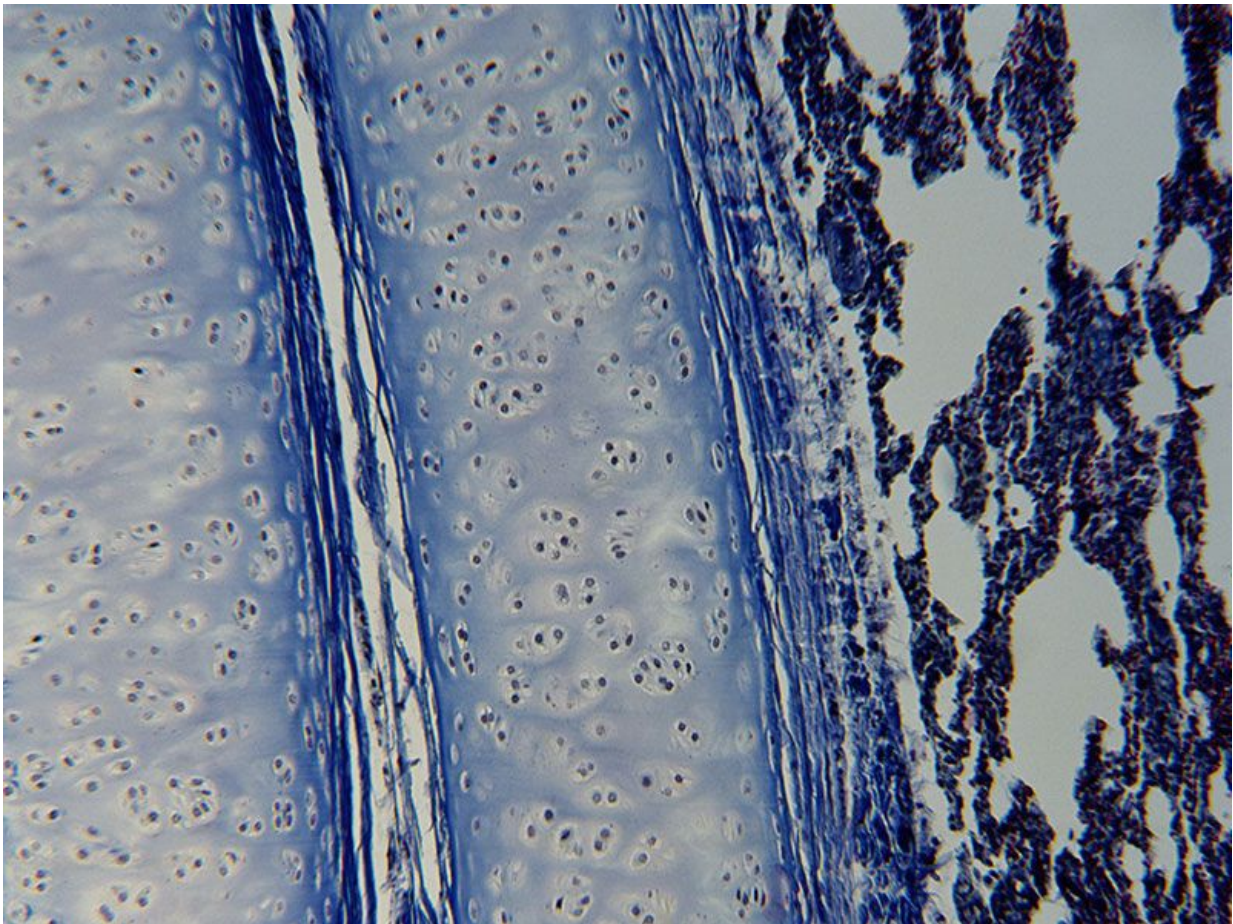


Hypoglycemia induces pro-inflammatory functional changes

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(HealthDay)—Hypoglycemia can promote mobilization of specific

subsets of leukocytes and induce pro-inflammatory functional changes in immune cells, according to a study published online Jan. 23 in *Diabetes*.

Jacqueline M. Ratter, from Radboud University Medical Center in Nijmegen, Netherlands, and colleagues examined whether the composition and inflammatory function of [immune cells](#) adapt a more pro-inflammatory state after hypoglycemia. The authors used ex vivo stimulations of peripheral blood mononuclear cells (PBMCs) and monocytes obtained during hyperinsulinemic euglycemic-hypoglycemic clamps in 11 healthy participants, 10 patients with type 1 diabetes with normal awareness of hypoglycemia (NAH), and 10 patients with impaired awareness of hypoglycemia (IAH).

The researchers found that in healthy controls and patients with NAH, but not those with IAH, hypoglycemia increased leukocyte numbers. There was a strong correlation for leukocytosis with the adrenaline response to hypoglycemia. PBMCs and monocytes displayed a more robust cytokine response to microbial stimulation after hypoglycemia versus euglycemia ex vivo; in [patients](#) with IAH the response was less pronounced. In PBMCs, hypoglycemia increased the expression of markers of demargination and inflammation.

"We conclude that hypoglycemia promotes mobilization of specific leukocyte subsets from the marginal pool and induces pro-inflammatory functional changes in immune cells," the authors write. "Inflammatory responses were less pronounced in IAH, indicating that counterregulatory hormone responses are key modulators of [hypoglycemia](#)-induced pro-inflammatory effects."

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