

Translational Research

Turning Basic Science into New Treatments

Drawing blood wouldn't seem to be a likely treatment for type 2 diabetes. But endocrinologist **Donald A. McClain, M.D., Ph.D.**, professor of internal medicine, thinks decreasing iron levels by drawing blood might help diabetes patients whose bodies absorb and store too much iron from food.

McClain, associate director of the Center for Clinical and Translational Science, formed his hypothesis based on the basic-science research of two School of Medicine researchers. He's now testing it in a clinical trial in which blood is drawn from diabetes patients who also have the iron overload disease hereditary hemochromatosis.

McClain's new treatment builds on the groundbreaking work of **Jerry Kaplan, Ph.D.**, health sciences assistant vice president for research and professor of pathology, and **James P. Kushner, M.D.**, associate vice president for clinical research and M.M. Wintrobe distinguished professor of internal medicine. Kaplan identified several

proteins responsible for moving iron from tissue to tissue and Kushner proved that hereditary hemochromatosis can lead to tissue damage and other health consequences.

"I carried their work further by looking at the diabetes risk in hemochromatosis and found it to be significant," McClain says. "That also led me to ask if simple dietary iron overload might be having the same effects in people with diabetes. By applying Dr. Kaplan's advances, we were able to identify which proteins that mediate iron balance should be examined for possible involvement in the diabetes disease process."

A trial in which blood was drawn from mice with diabetes showed "jaw-dropping results," so McClain began a clinical trial using the Center's inpatient unit. It's too early for definitive conclusions, but the results are promising.

