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## IMMUNE CELL/PRE-ADIPOCYTE INTERACTIONS INDUCE CYTOKINES WHICH ENHANCE ADIPOCYTE DIFFERENTIATION

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Lipodystrophy in HIV involves both loss of adipocytes in some regions and accumulation of fat at other locations, such as the trunk. Explanations for the loss of fat resolves around reduced differentiation or increased death of adipocytes, perhaps due to drugs and/or HIV interactions. However, accumulation of fat in HIV infected people has been more difficult to explain. We cocultured human preadipocytes with mononuclear cells (lymphocytes/monocytes) from peripheral blood divided by a transwell for 3 days. The supernatants were then removed and assayed via cytokine bead arrays using flow cytometry. We found that coincubation of mononuclear cells with preadipocytes caused a large increase in IL-6 and IL-8 in the supernatants (10–100 fold), with little change in IL-1, IL10 or TNF $\alpha$  levels.

Fat differentiation factors were then added and the accumulation of fat monitored over 15 days. Preadipocytes that had been cultured with mononuclear cells produced more fat as quantitated by digital microscopy of Oil Red O staining. We are now testing whether IL-6 and IL-8 enhance human fat differentiation directly.

These results suggest that mononuclear cells and preadipocytes chemically communicate and that such interactions can enhance fat differentiation. Such a mechanism might be involved in the accumulation of fat in HIV lipodystrophy.

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