

# Want a reason to love your lower belly fat? It's rich in stem cells

July 23 2008

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Fat removed from the lower abdomen and inner thigh through liposuction was found to be an excellent source of stem cells, with higher stem cell concentrations than other areas of the body, reports a Brazilian-based study in August's *Plastic and Reconstructive Surgery*, the official medical journal of the American Society of Plastic Surgeons (ASPS). This is the first study of its kind to examine whether fat tissues from different areas of the body vary in stem cell concentration.

"Adult stem cells, derived from our own tissues, hold strong promise for improved clinical therapies," said J. Peter Rubin, MD, a member of the ASPS Fat Grafting Task Force who is involved in pre-clinical trial work on stem cells taken from fat. "The potential for healing and repairing injury or disease through stem cells, including conditions like breast cancer and reconstruction, heart failure, spinal injuries, diabetes and Parkinson's disease are incredible. We may be able to more permanently and naturally get rid of pesky wrinkles or augment breasts with stem cell enriched fat in the future as well. Knowing more about the biology of stem cells will be of great value when we are ready for clinical trials in this country."

In the study, 23 female patients having liposuction in at least four different body areas agreed to have their fat isolated for adult stem cells and analyzed to determine stem cell concentrations. The body areas that were liposuctioned were: lower abdomen, upper abdomen, inner knee, inner thigh, flank and hips.



The study results found a significant difference in stem cell concentrations in different areas of the body. A major finding was that the concentration of stem cells was greatest in the lower abdomen and inner thighs. Interestingly, stem cell concentration in the lower abdomen was five times greater than in the upper abdomen.

"The value of stem cells harvested through fat is the ready and ample supply available," said ASPS President Richard D'Amico, MD. "Using stem cells will some day have very practical applications to the specialty of plastic surgery. That we may be able to generate new tissue or bone that can be used in many of the reconstructive and cosmetic procedures we do every day is a tremendous."

Stem cells are unspecialized cells that have not yet developed a specific function. Not only are they capable of self renewal, stem cells can divide and produce others that become specialized cells. Scientists and doctors theorize that stem cells will be able to repair or replace damaged or diseased cells. Clinical trials researching the potential of stem cells from fat are ongoing in Europe and Asia. In the U.S., there are many investigators doing pre-clinical trial work to meet the stringent safety guidelines the FDA sets for clinical trials.

According to ASPS statistics, more than 301,000 liposuction procedures were performed in 2007.

Source: American Society of Plastic Surgeons

Citation: Want a reason to love your lower belly fat? It's rich in stem cells (2008, July 23) retrieved 4 May 2024 from

<https://medicalxpress.com/news/2008-07-belly-fat-rich-stem-cells.html>



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