

# Cryopreservation of Adipose Tissue for Cosmetic Treatment of HIV Related Facial Lipoatrophy is Underused

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**Tel:** 1-520-626-5125**Citation:** Badowski M. Cryopreservation of Adipose Tissue for Cosmetic Treatment of HIV Related Facial Lipoatrophy is Underused. J Infect Dis Treat. 2015, 1:1.

## Abstract

Few infectious diseases have the social stigma or the emotional power that is often associated with HIV. Many AIDS patients suffer from depression or societal ostracization partly due to the fact that they look different over time. Banking of adipose tissue early after diagnosis for subsequent autologous use years later can offer patients a safe and affordable surgical option for reversing the changes in facial appearance and social stigma that associate with HIV status.

**Keywords:** AIDS, Adipose tissue; Cryopreservation; Facial lipoatrophy

**Received:** November 10, 2015; **Accepted:** November 13, 2015; **Published:** November 20, 2015

## Editorial

Few infectious diseases have the social stigma or the emotional power that is often associated with HIV. The psychological impact of any disease can be its own difficult, and occasionally insurmountable, hurdle that has very little to do with science or medicine. However, HIV infection seems to have taken on the mantle of a disease with the greatest overall social impact. Over more than three decades of research vast new understanding of the infection and disease progression has taken place. Current states of knowledge have allowed the development of drug cocktails (HAART therapy) that keep a large fraction of morbidity and mortality at bay. But as HIV+ patients live longer and better lives, they must still contend with prejudice and stigma that sometimes associates with disease status. This is often due to the simple fact that HIV+ people look like HIV+ people. As the disease progresses, elements of HIV associated lipodystrophy can change the individuals appearance. Banking of adipose tissue early after diagnosis for subsequent autologous use years later can offer patients a safe and affordable surgical option for reversing the changes in facial appearance and social stigma that associate with HIV status.

A variety of lipodystrophies exist with a variety of etiologies. For HIV+ patients, it can mean differences in fat content over various body areas including back, legs, face, abdomen and other locales. Lipodystrophy, in general, can be more accurately refined to facial lipoatrophy for purposes of this article. As new drugs have come on line, some HIV associated lipodystrophies have been

reduced. For example, many patients respond as well or better to non-nucleoside reverse transcriptase inhibitors than to the early thymidine analog drugs with much less lipohypertrophy. For many patients, however, the sunken cheeks and withdrawn look that some still adopt regardless of pharmacology remains a function of generalized long-term disease progression. Over time many patients find their physical features belie their health status. The weight loss, often seen in AIDS patients, becomes very apparent in the face. There exists, thankfully, ways to mitigate this. Fat transfer has been used for decades to reshape, repair and enhance soft tissue. In the hands of a skilled cosmetic surgeon fat transfer gives the face a fuller, healthier look. However, the generalized loss of fat seen in AIDS patients can make fat transfer difficult. When so little fat is available throughout the body, it's difficult to harvest enough to transfer to the face. Areas of drug or disease induced hypertrophy also appear to be less suitable for effective transplant. One solution is fat banking early on, at a point early in disease progression. The earlier fat can be harvested and stored the better the outcome is likely to be. Weight loss due to AIDS is partially due to disease progression and partly due to toxic side effects of pharmacological intervention. Add this to the fact that the stem cells present in fat are more potent the younger they are. It only makes sense that a person would bank fat as early as possible. Small or large amounts can easily be harvested and stored. Cryostorage technology allows for the fat tissue to be stored indefinitely. Once the fat has been saved, the patient has a bank of tissue from which they can draw the amount needed for later fat transfer procedures. Should the need arise, one can go

back and treat the face years later with stored tissue giving the HIV patient a healthier face to look at in the mirror each day.

Additionally, many AIDS patients suffer from depression partly due to the fact that they look different over time. We all age but people rarely notice our day to day aging. Every day we look in the mirror but fail to see the small daily changes. As years go by we might see a wrinkle that was not there before. We see a lone gray hair amid the brown ones. Maybe there are crow's feet about the eyes or the skin is just less firm than it was in our youth. These small changes appear over time to all of us. However, AIDS patients see more accelerated and more severe differences. Weight loss can occur rapidly in AIDS patients. These people can see themselves "wasting away" right before their own eyes. Surgical intervention using banked adipose tissue will undoubtedly help to stem depression in patients as their appearance can be vastly and rapidly improved.

Some may think that reintroduction of virus after long term disease management may be detrimental but there is no evidence to support that. There are no reports of adipose tissue serving as a reservoir for virus outside of the small amounts of residual blood after adipose harvest. Since adipose preservation protocols involve the removal of blood and interstitial fluids there is essentially no danger of a bolus of virus reintroduction at transplant.

Decades ago adipose transfer became a useful tool for cosmetic and reconstructive medicine. Today advances in regenerative medicine will find more uses for autologous adipose treatments. In the last several years cryopreservation of adipose tissue makes fat transfers all the more useful for cosmetic, reconstructive and regenerative medicine applications. It is time that these well-established techniques are applied to improve quality of life for the large population of people living with HIV.