When Fat is a ‘Good Thing’

As we age, our skin looses much of its elasticity or rebound, and it begins to develop folds and wrinkles. The aged and damaged skin displays more lines because the elastin fibers break and lose their rebound tendencies. The aged skin thins and falls into folds according to its attachments to the muscles beneath. Within the profession of Plastic Surgery, there are several approaches to correct this problem of damaged skin. One solution involves removing the excess skin and essentially ‘tightening’ the skin as is accomplished in the face lifting procedure. Another approach to treating wrinkles is to fill them with injectable materials that ‘plump out’ the wrinkle, thereby making the wrinkle less visible.

There are numerous filler materials available today for injection into the aging face and most of them are manufactured substances, to which the body reacts and eventually metabolizes, or removes. One of the most exciting developments in the field of Cosmetic Surgery is the technique of fat grafting as a semi-permanent or even permanent transfer. When properly executed, transplanted fat can, not only fill defects, but, it has been noted to improve conditions of radiation damage, scar tissue contracture and chronic ulceration. The fat seems to be incorporated into the tissues and seems to repair or replace the surrounding damage. A recent observation of heart tissue regeneration after the injection of fat into the damaged muscle, was particularly encouraging.

It appears, after intensive study and experimentation, that the fat cells actually carry some adult stem-cell potential. Stem cells have received vast media attention with the use of fetal or embryonic tissue. However, adult cells also carry some ability to replicate; scientists have long realized that the use of ones own cells is a much more reliable process of replacement and repair. The challenge of how to encourage these adult cells to multiply and repair tissue damage has remained an obstacle. In careful analysis of cell-by-cell transfer of the fat, into skin, muscle or other tissues, it seems that these transferred fat cells take on the charasteristics of their new environment. And if they survive they grow into new skin, new muscle, or new tissues; they seem to replace the scar and the damage nearby. As exciting as this concept is for cosmetic surgery, imagine the possibilities for tissue repair in the chronic disease state.