

# Biotechnological anti-aging cell-therapy treatment of facial wrinkles with cultured human fibroblasts

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## Introduction

The anti-aging, new age treatment of facial wrinkles with a patient's own living and cultured fibroblasts as cell therapy is an important advance in regenerative medicine. Autologous cultured fibroblasts (AHF) can be used to transform and treat facial wrinkles, hypoplasia, smile lines, acne, crow-feet and chicken pox scars. Because the patient's own cells are used, there are negligible risks and no immunologic rejection. Evidence-based studies show that facial contour deformities due to the aging process can be safely and effectively modulated by the use of cultured human fibroblasts. Cell therapy offers enormous and more natural benefits over artificial fillers, animal products and paralyzing options. Used together with other anti-aging therapies including pro-retinol creams adds to patient satisfaction and efficacy. Efficacy can be enhanced by ultrasound monitoring. Cell storage by cryoscience is possible that will eventually provide patients with a limitless source of un-aging fibroblasts. The mechanism of action of neocollagenesis following intradermal injection of AHF is thought to be by paracrine stimulation. Informed consent is advisable, potential patients should be counseled that their cells cannot always be cultured and expanded, and that there are inclusion and exclusion criteria for best results. Patients' expectations and ethical considerations should be addressed to enhance positive outcomes. Surgeon education in the use of biological cell therapy is imperative to achieve good results. Compared to paralyzing options, AHF is a slower but more durable biological approach to the aging skin of the face, especially if combined with specialised creams. It is sometimes referred to as "permanent Botox". Administration of AHF should preferably be administered by specially trained medical healthcare givers.

## Facial rejuvenation by cell therapy and regenerative medicine: Biotechnological advancement

Ben Franklin referred to facial wrinkles or rhytids as ..... *"In this world nothing is more certain than death, taxes and wrinkles"*. Wrinkles and lines affecting the face are a depressing component of aging. It is human nature to want to turn the facial clock back and eradicate ugly lines. Besides the use of rejuvenating creams, Botox® and artificial fillers, biotechnology and tissue engineering of human fibroblasts now offer the patient another special option to ameliorate facial wrinkles, achieve a firmer skin that is softer with a more silky appearance.

The novel concept is referred to as the biological approach to facial aging and regeneration with engineered living cells. AHF can ameliorate fine wrinkle lines, smile lines, crow-feet and deep set wrinkles due to the loss of fibroblast function.<sup>1,2</sup> AHF can be used to address skin hypoplasia and detrimental changes following solar damage. This is because the patient's own transplanted fibroblasts can modulate accumulated sun damage to the face that induces collagen and elastin fibre breakdown. The human dermis undergoes vast changes during aging including dysfunction and reduced activity of the fibroblast, collagen synthesis and extracellular matrix (ECM) dynamics.<sup>3,4</sup> Fibres get lost, papillary dermal exentuation is lost, and the ground substance becomes negatively affected.