Anti-aging Treatments ELE282 Biomedical Engineering Seminar, February 11, 2002 Amy Wright Biomedical Engineering, University of Rhode Island Kingston, Rhode Island 02881

The idea of living forever has been the fantasy of man since his existence. With the advancing of technology this fantasy has now become a reality.

One of the most promising anti-aging treatments is the Human Growth Hormone (HGH) Replacement Therapy. On going medical research and clinical studies indicate that 6-months of HGH replacement therapy can reverse several biomarkers of aging by 10 to 20 years. The most common form of this therapy is through injection of HGH into the body every day. However, there are oral sprays that are available and used almost as frequently.

The results of this treatment include an increase in muscle mass, a decrease in body fat, an increase in bone density, improved skin tone and the removal of wrinkles. Most users of anti-aging treatments are interested in the superficial results, such as improved skin tone and texture, however it has been proven for women who use them that it increases bone density thereby helping to prevent osteoporosis.

The LifeSpan Longevity Medical Center has been researching since the mid-eighties the effects of the reversal of several biomarkers on aging. Biomarkers are biological measurements that determine biological age- not chronological age.

LifeSpan has been researching the effects of adding "natural" human elements such as HGH, DHEA, melatonin, etc., to help ensure the body is able to repair and regenerate itself. They have also been studying the effects of environment on aging as well. Their experiments have shown, for example, liver samples from both young and elderly persons perform almost identically, when given the same environmental conditions. LifeSpan's generic conclusions of their research are optimum nutrition through simulating bodily chemical processes both in terms of hormones and vitamins has benefits for the aging condition.

Is eternal life possible??? Are we going to be able to live forever some day? Scientists say if people start taking the HGH treatment now, it will increase their life span 10-20 years and if they continue with the treatment, theoretically technology will keep advancing and more anti-aging devices will be created allowing them to live forever. A few cornerstones have been hit, such as the time it takes to release a new drug on the market. The average time it takes the FDA to review and release drugs on the market is 12 years. Nonetheless, scientists have full confidence that in a matter of less than 10 years people will have the ability to live to be 200 years old.