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## **Effects of local nandrolone decanoate on TGF-1 $\beta$ and IGF-1 in the healing of the muscle wound**

## Abstract

Identifying the appropriate therapy for the problem of exposure to muscular wounds is an essential issue in people and in animals, especially racing animals such as horses, in whom muscular function is part of life. This study investigates the hypothesis that local application of the steroid nandrolone decanoate to the masseter muscle accelerates the healing as combined with pathological repair. The rabbits were split into two equal groups at random. The first group (ten rabbits), known as the control group, had surgery and received distilled water injections. The second group (ten rabbits) had surgery and received intramuscular injections of nandrolone decanoate 10 mg/kg once daily from the first day after surgery to day of sacrifice. Five rabbits from groups A and B were sacrificed on the third and seventh days. All animals were euthanized, and then masseter muscle tissue was removed for histological analysis. Three days following the surgical wound, a microscopic inspection of the control group's muscular wounds revealed severe myositis with inflammatory exudate cells, hemorrhages, and necrotic myofibrils. Acute myositis wound site with inflammatory exudate cells, atrophy and increase in connective tissue was present after seven days. Three days following the surgical wound, a microscopic examination of the treated group's muscular wounds revealed mild myositis with inflammatory cells, vitreous degeneration, and muscle fiber atrophy. Following seven days, mild myositis with inflammatory cell infiltration, muscle fiber atrophy, and hyaline degeneration manifested at the site of wound. On the 3rd day of treatment period, the levels of serum TGF-1 $\beta$  and IGF-1 in the groups of study indicated a highly significant difference, however on the seventh day; there was no difference between the groups. Local Nandrolone decanoate helps hasten the healing of muscle wounds.