

## The Sexual Dimorphism with Emphasis to the Gluteal Muscle Differences

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## INTRODUCTION

Due to the sexual dimorphism, there are obvious differences in appearance between males and females. In the simians (small monkeys) it is less pronounced - almost absent. During the course of biosocial evolution in greater - the so called anthropomorphic -apes (orangutan, chimpanzee and gorilla) this dimorphism became more accentuated.In our own species the tendency is to return to earlier times, but differences are still evident, especially in sports performance, injury incidence and location. Thus the recent greater exposure of women to high-level sports has produced an increase in the absolute numbers of injuries in women. However, anatomical differences between males and females in the musculoskeletal system are evidently marked. For example, women naturally have more subcutaneous fat than men, in a characteristic distribution over the buttocks, thighs and behind the upper arms [1]. Skeletal differences are also evident in tendons' attachments and obviously in the pelvis - which has larger inlet and outlet to allow easier birth [2]. Muscle size and development is also less advanced in female, due to the physiologic effects of sex hormones too [3-5]. Practicing less stressing athletic activity plays a role in ligament and tendon laxity among women, allowing females to be generally supplier than males. At times, these anatomic differences are accentuated by feminine fashion, as p. ex. the wearing of dresses (Figure 1).

As regards the gluteus muscles the possibility that the difference was formed during the course of evolution, as a result of increased physical activity of a male such as hunting, home protection, more walking than women etc, can be considered.

This could also be the reason why men and women are participating in different athletic teams.

The average lifetime expectancy of the early Homo during the Lower Paleolithic period is considered to be of about 22-25 years [6, 7]. Thus, regarding females with such a short lifespan, the reproduction should start at most at the age of 15. In these circumstances females should have less available time regarding activities that male did, such as hunting etc. Later on as life expectancy increased, more "space" was available for females to engage in activities where males were involved too.



Figure 1: Muscles that Move the Superior Appendages.

On the other hand the participation in hunting of females within an early Paleolithic male group of hunters must be reflected negatively to the efficiency, as for instance by slowing down the mobility or the capacity of catching prey.

However pastoralism remained in hands of men, influencing the myoskeletal differences within the two members of our species.

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