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Commentary

I Want to Increase my Muscle Mass (MM)

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Nowadays, one of the main concerns of teenagers who are into recreational and high performance athletes who come to my practice, are their intention to increase their Muscle Mass (MM). Many times this is due to their desire, and some others, to the instructions of their coaches.

Normally, teenagers come with their parents, dragging along a family discussion about whether or not to intake dietary supplements to achieve such purpose. There is enough medical evidence as to sustain that the increase in MM results almost exclusively from a physical training program orientated to that end, together with an adequate nutritional scheme. With respect, to this last item, I recommend to read Sports Nutrition Group's "nutritional guidelines", published in Deportologia Pediatrica: http://www.deportologiapediatrica.com/pdf/ Nutricion%20-%20Antropometria/AumentoMasaMuscularJovenes. pdf

The only dietary supplements which have demonstrated being highly effective in increasing MM, accompanied by adequate training and nutrition, are steroids and the growing hormone, which, to our relief are forbidden in sports and are deemed as Doping. There is no enough medical evidence as to sustain that the intake of protein supplements and creatine contribute to significantly increase MM. To some extent, all types of training result in some degree of muscle hypertrophy. But generally speaking, guidelines for training with overload to achieve the increase of MM includes exercises of 6 to 12 repetitions per series, with loads that don't exceed 80% of 1RM (1RM=one repetition maximum=the maximum amount of force that can be generated in one maximal contraction). This is, exercises which are neither oriented to maximum strength nor to work on muscle power.

From what we just described, we could ask ourselves: is it necessary to increase MM to improve sports performance? If so, by how much? How to measure the increase? Did the increase in MM result in an improvement of any physical capacity? Training for muscle hypertrophy, normally increases the size of slow muscle fibers, while the fast fibers are linked with explosive movements. Therefore, we should establish what we want from training. Is it the same to be a sprinter than an endurance runner, a front row or a back in rugby, a center back o side midfielder in soccer? Absolutely not! Then, each particular sport and even more the specific position within it will require the development of different



Figure 1: Physical activities in sports.

physical capacities, and training must be planned accordingly (Figure 1).

On the other hand, it is in fact correct that prior to a power training, a physical structure able to support such training is needed, as well as knowledge of the training techniques, to avoid injuries. Therefore, what it's really important is not the reflection in the mirror, but what each sport requires; and for that we need to know which are the physical and performance goals, for which it is necessary to have as objective parameters the measurement of body composition (anthropometry, see: http://www.deportologiapediatrica.com/pdf/Notas%20para%20Padres/ Antropometria.pdf) and the tests for strength, speed, endurance, flexibility,

So back to the family argument, the intake of legal dietary supplements plays a very minor role in building a body aimed at obtaining performance goals; and such performance is much more linked to the development of certain capacities than to the increase in MM.

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