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# Some indicators of muscle stability in the lower trunk area and their relation to the dynamic balance of basketball players

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**Abstract**
The study objective to establish a correlation between some of the indicators that indicate the bearing of the muscles of the bottom of the trunk with the body balance index to infer the amount of energy possessed by the players to perform their effectiveness without problems in motor performance. The study sample consisted of (10) players of basketball players homogeneous in length, age and weight variables. The tests were carried out for the sample members and the data were collected and processed statistically. The most important conclusions were reached.
**Keywords:** muscle stability, lower trunk and dynamic balance.

## Introduction:

The game of basketball of the games that require special physical and technical abilities and this therefore needs to install a body prepared according to a high strategy so there is a common language between the muscles and motor performance to produce the best level of motor.[1]

The balanced relationship between the muscles of the working body and the opposite in the work is the essence of the body and on a large scale. As what the human in general movements depends on the strength of the balance of the muscle down the trunk because of the great importance in maintaining the natural balance of the body in various functions of the day, especially in basketball players, as the requirements of this game must have a great ability to achieve better Results.[2]

Functional movements depend heavily on this part of the body, and the lack of muscle development can lead to muscle injury [3].The muscles of the bottom of the trunk are strategically located in the abdomen, in the middle and below, and also in the hips [4].

Therefore, the researchers reached the need to go into this type of research because of its importance in achieving the achievement of sports.

**Research Methodology:**

The researchers used the descriptive methods in the method of interconnectivity to suit the nature of the research procedures.

**The research sample:**

The study sample included (10) players of young basketball players, who were selected after the homogeneity between the variable age (20 ± 0.1) and the variable length (180 ±0. 6) and the variable weight (78 ±0.3).

**Means, devices and tools used in research:**

- Arab and foreign sources and references.
- The Internet
- Observation and experimentation.
- Basketball (legal).
- Basketball goal number (2).
- Balls basket number (12) type molten.
- Tape measure.
- Switch number (1).

**Tests used in research:**[5]

**1- Measuring the strength of the muscles of the buttocks**

Purpose of the test: - Measuring the strength of the muscles of the buttocks.

Tools: Stopwatch, 2 x 2 meter mat, whistle.

Performance specifications: The test is performed individually. The laboratory is required to lie on the ground and inform it after the whistle is heard. It is based on both elbows for the arm as well as the toes, so that the body is positioned straight and parallel to the ground.

Registration: The values are calculated according to the electronic time clock and to the nearest second.

**2 - Measure the strength of carrying the muscles of the lining, shoulder and right side pelvis:**

The purpose of the test: - Measure the strength of carrying the muscles of the abdomen, shoulder and lateral pelvis on the right.

Tools: Stopwatch, 2 x 2 meter mat, whistle.

Performance Specification: The test is performed individually. The laboratory is required to lie sideways on the floor and to inform it after hearing the whistle. The right hand attachment is based on the arm and feet, so that the body is positioned upright and in parallel with the ground.

Registration: The values are calculated according to the electronic time clock and to the nearest second.

**3. Measure the strength of the shoulder, shoulder, and left side pelvis:**

Purpose of the test: - Measure the strength of carrying the muscles of the abdomen, shoulder and lateral pelvis to the left.

Tools: Stopwatch, 2 x 2 meter mat, whistle.

Performance Specification: The test is performed individually. The laboratory is required to lie sideways on the floor and to inform it after hearing the whistle based on the left hand attachment, as well as the foot, so that the body is positioned upright and in parallel with the ground.

Registration: The values are calculated according to the electronic time clock and to the nearest second.

**4- Move over tags:**
Purpose of the test: - Balance measurement.
Tools: stopwatch, measuring tape, eleven marker (4 \ 3 inch).
Performance: The distance between the mark and the other is 1 meter, the laboratory stands on the first mark in the right foot, and then jumps to find the mark number (1) in the left foot comb (note the cover of the mark completely by foot) and try to persist in this situation as long as possible maximum of five seconds, And then jump to the number (2) to stand on the right instep and prove the largest possible time for a maximum of five seconds, and so until it reaches the tenth mark using the same method, noting the change in the foot of the jump in each jump.
Five of them are recorded for each bounce attempt, five of which are properly raised. This requires that it falls on the instep to cover the mark on the ground. The other five degrees are recorded for the laboratory for every second that can be established after the landing. The image becomes a total score of the test is 100 degrees.

**Results and discussions:**

**Table (1).** Show Descriptive Statistics

| Tests | Mean | Std. Deviation | N |
|---|---|---|---|
| Back Muscles | 1.0951 | 0.04842 | 10 |
| Abdomen Muscles Right | 46.58 | 1.84499 | 10 |
| Abdomen Muscles Left | 47.76 | 2.69946 | 10 |
| Body Balance | 55.1 | 1.91195 | 10 |

**Table (2).** Show the Correlations between the variables of muscles and balance of body

| | | **Body Balance** |
|---|---|---|
| Back Muscles | Pearson Correlation | 0.460 |
| | Sig. (2-tailed) | 0.181 |
| | N | 10 |
| Abdomen Muscles Right | Pearson Correlation | 0.196 |
| | Sig. (2-tailed) | 0.588 |
| | N | 10 |
| Abdomen Muscles Left | Pearson Correlation | 0.382 |
| | Sig. (2-tailed) | 0.276 |
| | N | 10 |
| **Body Balance** | Pearson Correlation | 1 |
| | Sig. (2-tailed) | |
| | N | 10 |

The results shown in table (2) show that there is a correlation between the variables of muscular endurance and balance of the body, as increasing muscle balance in terms of strength increases the body balance and protects the player from the possibility of injury.[6]

The weakness of the underlying muscles at the bottom of the trunk results in unnecessary movement in the trunk resulting in weakness in the balance of the body and this leads to waste of energy and poor motor performance, which leads to the weakness of the final output of the movement.[7] The characterization of the tests are

the best evidence of keeping the balance the closer the degree of testing In relation to the test balance to (1) it means that the muscles are highly capable of maintaining balance and this comes from the results in table(2).[8]

**Conclusions:**

There is a correlation between abdominal muscle variables and balance in the movement of the body, but this relationship is not strong enough and this conclusion was based on the tests that were subjected to the sample of the research.

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