Albanian Sport Science Association

Special Olympics Albania

A cross section study on anthropometry and motor skills in Albanian Special Olympics athletes during 2023: FUN fitness screening test battery

REPORT 2024

Play Unified –Young Athletes

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Abstract

ASSA team and researchers in cooperation **Speical Olympic Albania** and in collaboration with the experts from **SMART Sport Center** had composed a protocol of measurements based on **the European Protocol for Special Olympics** and protocol for anthropometric measurements and test on children. This project plans to study basic movements of children with intellectual disabilities, flexibility and strength, finding a correlation between sports practice and physical wellness.

Methods

SOA athlete's participants were measured during 2023 year in Albania. Participation by age category (5 years) were- age group 5-9 years (N= 12), Age group 10-14 years (27) and age group 15-20 years (N= 14). Anthopometric body weight and waist circumference were measured. While motor test were assessed such as: ***Functional shoulder rotation (flexibility)*** – using ***Modified Apely's test*** (left up/right down) and (right up/left down); ***Timed stand test – sit and stand with no assistance.*** The timed-stands test is a simple method to quantify functional lower extremity muscle strength (hip and knee extension); **The Partial Sit-Up** Test is a simple method to quantify abdominal muscle strength/ endurance; ***Single leg stance with eyes open and close.*** The single-leg stance test with ***eyes open and close*** is a simple method to quantify balance with the assistance of visual cues; **Seated push-up test.** The Seated Push-Up Test is a method of assessing strength of the triceps, shoulder and scapular muscles. Data are presented only with descriptive statistics analysis such as mean, SD, min and max values for each test assessed in this project.

Contributors

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Albnian Sports Science Association (ASSA)

"Connect community through physical activity and sports"

Our strategy is to connect, cooperate and collaborate with many partners that play a key role in the community that promote health, physical activity and sports.

www.assa.al

Albnian Sports Science Association (ASSA)

ASSA evolved from innovative ideas of dedicated sports science students. The organization was established in 2012 and registered as an NGO in the Republic of Albania located in Tirana. ASSA believes that human relationships are powerful, and interaction with each other are the foundation for change in creating a viable community that can bring positive and significant outcomes nationwide through physical activity and sports. Our goal is to establish relationships based on trust, understanding and shared values regardless of racial, ethnic, or socio-economic status.

The ASSA provides opportunities through scientific information that will improve the quality of sport training and a healthy active lifestyle in all age groups. We encourage the incentives of youth to be a driving force of ideas who can further contribute to our activities and projects.

ASSA is always open to partnerships with major research funding bodies, academies, universities, regulators, NGO's, healthcare, sports participants and others willing to participate and promote sports, physical education, physical activity and health.

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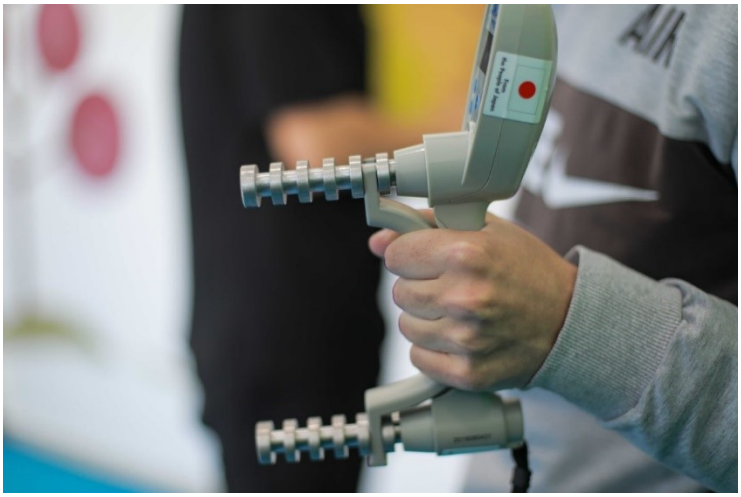
Introduction- about FUN Fitness Screening project

Play Unified –Young Athletes

As part of the Special Olympics Health Impact Program in Albania the Albanian Sports Science Association has conducted anthropometric measurements and physical tests of children with disabilities. This project is implemented by the Special Olympics Albania, funding from Special Olympics Inc. within the Golisano Foundation for Health of people with Intellectual Disabilities These measurements are of particular importance not only for reflecting the current level of disabled athletes with but also for monitoring the quality of training program applied in this category.



ASSA team and researchers in cooperation **Speical Olympic Albania** and in collaboration with the experts from **SMART Sport Center** had composed a protocol of measurements based on **the European Protocol for Special Olympics (FUN Fitness Screening)** and protocol for anthropometric measurements and test on children.

This project plans to study basic movements of children with intellectual disabilities, flexibility and strength, finding a correlation between sports practice and physical wellness. Simple measurements were taken. Children enthusiastically introduced themselves and gave the team a worm welcome in their event.

While getting to know them, ASSA team took notes and asked questions about their lifestyle, how often do they train and participate in sportive events. Than they tested children's flexibility and strength with simple tasks such as task one two three.

These tasks were approved by the International Protocol and carefully applied by the team.

About the project

The project aim was to engage *families and caregivers* of people with intellectual disabilities (ID) in Special Olympics and offer an environment where parents and caregivers could gain direct access to health information about diabetes, the importance of prevention (screening of the levels of diabetes and physical activities) and treatment options according to the doctors and with emphasizing good nutrition and healthy lifestyles. There were 5 stand-alone events in

5 cities in Albania (Pogradec, Berat, Fier, Gjirokastër, Përmet) where families and athletes with ID where part of the sessions. Apart from the basic information provided by a doctor and screening of diabetes offered by the pharmacy, screening of vitamins levels was something unique for all the carers and athletes since none of the participants and their families hadn't done it before. All the participant was provided afterwards with a package of supplements and also had the possibility for a joint fitness session. Something worth mentioning is the FUNFitness Screenings process done by the Albanian Sports Science Association for majority of the participants. At the end of data processing, we will have a final report regarding the fitness capacity of atheltes.

Metrics:

Beneficiaries	
Athletes	150
Unified Partners	35 (mainly siblings)
Family Members	60
Others	50 (doctors, facilitator, coaches, nurses, pharmacist and volunteers)
Scope	
Cities/Communities	8 interventions
Care Packages	160 (60 participants were equipped with a diabetes screening device)
Doctor Consults	160 (direct beneficiaries)
Statistics	
63%	% of participants that had not measured their glucose indicators
100%	% of participants that had not measured their vitamin level indicators
5%	% of participants that have been involved with similar health intervention

Methods

The test manual is taken from the FUNfitness Tests and Measures Guidelines. 53 SOA athletes participated in this study. SOA athletes were measured for anthropometric measurements (body weight, waist circumference), flexibility (Apley Test- right up/left down and vice versa), balance (one-legged stance right/left up eyes open/closed, timed up and go (TUG), timed sit to stand), strength (handgrip right/left hand, push ups, curl ups).

The measurements were made in the period March-December 2023, in 6 cities of Albania such as: Tirana, Shkodër, Roskovec, Përmet, Gjirokastër, Fier.

Protocols of the tests

Measurements and tests were dived into four categories targeting the main areas that contribute in the physical performance of the athlete. A survey that helps determine the demographics of participating athletes was used. Details such as disabilities, frequency of training, and other anthropomorphic measurements were included in the survey. Using the *Timed Stand Test*, ASSA lab team measured the strength of the athletes in 10 repetitions. Using a modified version of the *Single Leg Stance Test*, ASSA lab team measured the ability of the athletes to maintain balance on both right and left legs, with eyes opened and closed. To measure the flexibility of the athletes ASSA team used a modified version of the *Apley's Test* (Functional Shoulder Rotation).
The results are calculated below.

TIMED STAND TEST – Sit and stand with NO assistance

The timed-stands test is a simple method to quantify functional lower extremity muscle strength (hip and knee extension). The test requires the athlete to complete 10 full stands from a seated position as quickly as possible without the use of the arms.

Mode of administration

1. Have athlete sit on a firm straight-backed chair
2. Use pieces of hard foam or wood to adjust the height of the chair seat and/or to position the feet flat on the floor as necessary to maintain a position with hips and knees at a 90 degree angle.
3. Have the athlete position the arms by the sides with the elbows flexed to 90 degrees. Arms remain in this position for the entire test.
4. Athlete is instructed to "stand from sitting, then sit down again, without using your arms. Repeat this 10 times as quickly as possible."
5. PT demonstrates the test.
6. PT tells the athlete to start with a "ready, set, go."
7. PT, PTA or student stands beside the athlete in case the athlete loses his/her balance during the task.

Scoring

8. PT or PTA starts a stopwatch or timer when he/she says “go.”
9. Timer continues until the athlete sits down from the 10th stand.
10. Record the time to perform the task in seconds.

Education: Time greater than 20 seconds or inability to do 10 stands indicates need for education.

FUNCTIONAL SHOULDER ROTATION – Modified Apely’s test

Participant testing position

1. Athlete stands or sits in a chair, if standing provide a chair or other support for the athlete to hold on to. (Athlete may also sit in a wheelchair.)
2. Athlete is instructed to reach one arm behind the head and down the back, while the other arm reaches behind the hip and up the back.

Physical therapist position

3. PT demonstrates the test.
4. PT then stands behind the athlete.
5. PTA or student stands in front of the athlete for safety.

Measurement

6. PT demonstrates the test position.
7. Athlete is instructed to “try to touch your index fingers together.“ (one arm is in flexion/abduction/lateral rotation; the other is in extension/adduction/ medial rotation).
8. The measurement is the distance in centimeters between the index fingers

Recording

Use a tape measure to measure the distance between the index fingers in centimeters.

9. Determine the side being recorded by the arm on top (i.e., left arm on top = left; right arm on top = right).
10. If the fingertips touch, record the distance as 0 cm.

11. If the fingertips cannot touch, record the separation as negative (e.g., - 15.2 centimeters).

12. If the fingers overlap, record the overlap as positive (e.g., + 2.5 centimeters).

13. Symmetry occurs if each arm reaches equally toward the middle (approximately T7) or at the level of the inferior angle of the scapula.

14. Asymmetry occurs if the arms do not approach the midline evenly (i.e., one arm is more flexible and overreaches the midline, or is less flexible and cannot approximate the midline).

15. Repeat on both sides and record on the score sheet.

Education:

Recordings of -16 centimeters to -50 cm. (or more) (e.g., -18 cm.) or asymmetry indicate need for Education.

PARTIAL SIT-UP TEST

The Partial Sit-Up Test is a simple method to quantify abdominal muscle strength/ endurance. The test requires the athlete to complete 25 sit-ups within one (1) minute from a supine position.

Mode of Administration

1. Participant is positioned supine on mat. If athlete cannot get on the mat, the test can be carefully done on a sturdy table.
2. Athlete's legs are flexed to 90 degrees hips/90 degrees knees and placed on a chair or stool.
3. PT uses pieces of hard foam or wood to adjust the height of the stool if necessary.
4. Athlete arms are positioned straight out in front of the chest with the elbows extended. Arms remain in this position for the entire test.
5. Athlete is instructed to "lift your head and slowly sit up until you touch the target, then slowly lower back down again. Repeat this until I tell you to stop. We want you to do as many as you can in one minute".

6. Goal is to have athlete do a partial sit-up, defined as sitting up until the base of the scapula clears the floor or table, then returning the back and head to the floor.
7. PT must verify that the scapula has lifted off the mat.
8. Do a practice sit-up to determine how high the athlete needs to sit up to clear the scapula, then put a target at the position.
9. PT demonstrates the test.
10. PT coaches the athlete to begin when he/she says "ready, set, go."
11. PT sits near the athlete to encourage the athlete to continue the task correctly.

Scoring

1. PT or PTA starts a stopwatch or timer when he/she says "ready, set, go."
2. Timer continues until one minute has elapsed or until the athlete does 25 sit-ups correctly.
3. The number of sit-ups completed is recorded.
4. The athlete can stop to rest momentarily, then begin again.
5. If the athlete cannot continue for one full minute, the number of sit-ups completed is recorded.

Education

The inability to do 25 sit-ups indicates need for Education.

SINGLE LEG STANCE WITH EYES OPEN

The single-leg stance test with ***eyes open*** is a simple method to quantify balance with the assistance of visual cues. The test requires the athlete to stand on one leg with the eyes open. Balance must be maintained as long as possible.

Mode of administration

1. Athlete stands on both legs with feet shoulder width apart.
2. Athlete is placed within arms' reach of a chair for security.
3. The athlete is instructed to place hands on hips.
4. Athlete is instructed to "slowly lift one leg and balance. I will time you until you lose your balance."
5. PT demonstrates the test.

6. PT stands in front of athlete to encourage the athlete to continue without fear of falling. PTA or student stands behind athlete for safety.
7. PT coaches athlete with a "ready, set, now stand on one leg."
8. Test continues until athlete loses balance, or puts the other foot down (maximum time = 20 seconds).

Scoring

9. PT or PTA starts a stopwatch timer when he/she says "ready, set, now stand on one leg."
10. Timer continues until balance is lost, or foot of the flexed leg touches the ground.
11. The time completed before loss of balance (up to 20 seconds) is recorded.

Education: Stance time of less than 20 seconds, or asymmetry might indicate need for Education.

The single-leg stance test with ***eyes closed*** is a simple method to quantify balance without the assistance of visual cues. The test requires the participant to stand on one leg, with eyes closed or wearing a blindfold. Balance must be maintained as long as possible.

Mode of administration

1. Athlete stands on both legs with feet shoulder width apart.
2. Athlete is placed within arms' reach of a chair for security.
3. Hands are placed on hips
4. Arms remain in this position for the entire test.
5. Athlete is requested to "lift one leg, then close your eyes and balance. I will time you until you lose your balance."
6. A blindfold may be used if the athlete is unable to maintain his/her eyes shut, and only if the athlete agrees to be blindfolded.
7. PT demonstrates the test.
8. PT stands in front of the athlete to encourage the athlete to continue with without fear of falling. PTA or student stands behind athlete for safety.

9.PT coaches the athlete with a “ready, set, stand on one leg, now close your eyes.”

Scoring

10. PT or PTA starts a stopwatch timer when he/she says, “ready, set, stand on one leg, now close your eyes.”
11. Timer continues until balance is lost, or foot of the flexed leg touches the ground.
12. The time completed before loss of balance (up to 10 seconds) is recorded.

Education*: Stance time of fewer than 10 seconds or asymmetry might indicate need for Education.*

SEATED PUSH-UP TEST

The Seated Push-Up Test is a method of assessing strength of the triceps, shoulder and scapular muscles. The test involves pushing the body up out of a seated position, holding, and slowly lowering it back to sitting.

Mode of Administration

1. PT positions the athlete on the floor (if the athlete uses a wheelchair he or she can push up on the armrests).
2. PT places the athletes’ knees out straight with heels resting on the floor or table.
3. PT or PTA must guard the push-up blocks to prevent them from tipping.
4. PT instructs the athlete to push his/her body up from floor until the elbows are straight, hold for 20 seconds, then slowly lower back into the seat.
5. Athlete can practice prior to the test.
6. PT coaches the athlete to begin when he/she says “ready, set, go.”

Scoring

1. PT times with a stopwatch the number of seconds that the athlete can hold in the push-up position.
2. Record the number of seconds held on the score sheet.

Education

An athlete who cannot hold for at least 5 seconds, twice, needs Education.

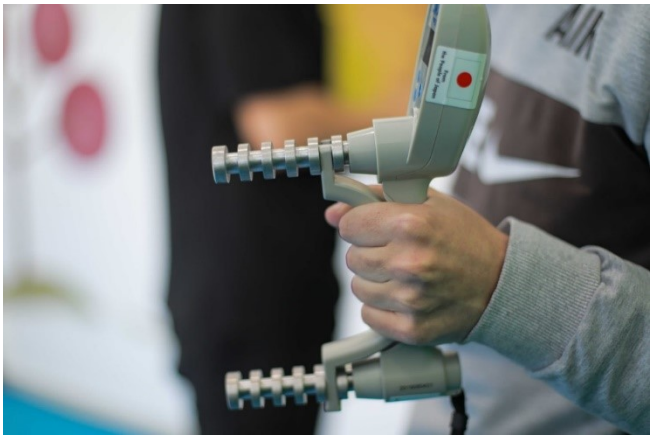
Muscular Strength: Hand Grip Strength

Objective:

To squeeze the hand dynamometer has forcefully as possible.

Purpose:

The Hand Grip Strength Test measures the isometric strength of the hand and forearm muscles.



Equipment/Space Required:

• Hand Grip Dynamometer

• Pencil/Pen

• Score Sheet

To conduct the Hand Grip Strength Test, you will need a hand grip dynamometer. Digital dynamometers are easy to use and can be purchased online for low cost

How to administer the test

1. Inform the participant that the Hand Grip Strength Test measures how strong their hand and forearm muscles are and that the

goal of the test is to squeeze the hand dynamometer has hard as possible with each hand.

2. Explain the testing procedures while you demonstrate how to squeeze the dynamometer. The participant practices the test once using each hand before you begin. Offer feedback so that the participant understands and is clear on the proper form.

3. The dynamometer should be adjusted to fit the participant's hand. The handle should be in the middle of the four fingers, and the base should be on the heel of the hand.

4. Set the dynamometer dial to zero.

5. The participant bends their elbow to 90 degrees. Instruct the participant to keep their arm at their side while squeezing and not to touch the dynamometer to their body. The hand (right or left) to

be tested first can be selected at random.

6. Instruct the participant to squeeze the dynamometer “as hard as possible” and to hold for 5 seconds. The tester should encourage the participant to make their maximum effort and can count out
loud to 5 seconds during the hold.
7. The participant performs two attempts on each hand.
8. Record the score and reset the dynamometer to zero before switching hands. The participant will perform two attempts with each hand with 30 seconds rest in between.

Results

The data from table no. 1 show the participation of SOA (Special Olympic Albania) athletes in this study. The data shows a participation of 53 athletes where: 12 athletes are in the age group of 5-9 years, 27 athletes in the age group of 10-14 years and 14 athletes belong to the age group of 15-20 years.

Table.1: Descriptive Statistics for SOA athlete's participants in 2023 by age category (5 years.)

Age Category (5years)	N
Age group 5-9 years.	12
Age group 10-14 years.	27
Age group 15- 20 years.	14

Facts

A total of 53 SOA athletes participated in the study.

The data extracted from table no. 2 show the average values and the standard deviation (minimum and maximum value) of body weight according to age groups for SO athletes. The average body weight data for the age group 5-9 years is 27.5 kg (SD 7.0), the age group 10-14 years is 47.7 kg (SD 16.5) and the age group 15-20 years the average body weight data shows 61.9 kg (SD 11.8).

Table 2: Descriptive Statistics for SOA athlete's measurement in 2023 by age category (5 years.) for body weight

Age_Category_5years		N	Minimum	Maximum	Mean	Std. Deviation
Age group 5-9 years	Body Weight	12	19.9	45.0	27.450	7.0110
	Valid N (list wise)	12				
Age group 10-14 years	Body Weight	27	28.0	83.5	47.700	16.5563
	Valid N (list wise)	27				
Age group 15- 20 years	Body Weight	14	44.7	85.8	61.907	11.8389
	Valid N (list wise)	14				

Facts

There is a progressive increase in body weight in SOA athletes by age group.

The data extracted from table no. 3 show the average values and the standard deviation (minimum and maximum value) of waist circumference according to age groups for SO athletes. The average waist circumference data for the 5-9-year-old age group is 59.7 cm (SD 7.0), the 10-14-year-old age group is 75.1 cm (SD 14.6) and the 15-20-year-old age group average waist circumference data shows 81.7 cm (DS 8.4).

Table 3: Descriptive Statistics for SOA athlete's measurement in 2023 by age category (5 years.) for waist circumference

Age_Category_5years		N	Minimum	Maximum	Mean	Std. Deviation
Age group 5-9 years	Waist Circumference	12	52.0	76.0	59.708	6.9982
	Valid N (list wise)	12				
Age group 10-14 years	Waist Circumference	27	55.5	107.0	75.093	14.5741
	Valid N (list wise)	27				
Age group 15- 20 years	Waist Circumference	14	68.7	94.0	81.693	8.4219
	Valid N (list wise)	14				

Facts

There is a progressive increase in waist circumference in SOA athletes by age group.

The data extracted from table no. 4 show the average values and the standard deviation (minimum and maximum value) of flexibility according to age groups for SOA athletes. The mean data for upper left/lower right for the age group 5-9 is -6.3 cm (SD 9.0), 10-14 is -5.6 cm (SD 8.7) and for the age group 15-20 is -11.6 cm (SD 13.4). And for the top right/bottom left, the averages for the age group 5-9 years old are -6.4 cm (DS 8.7), for 10-14 years old they are -5.6 cm (DS 8.7) and for the age group 14-20 years old -9 cm (DS 11.3)

Table 4: Descriptive Statistics for SOA athlete's measurement in 2023 by age category (5 years.) for flexibility.

Age_Category_5years		N	Minimum	Maximum	Mean	Std. Deviation
Age group 5-9 years	Shoulder: Apley Test (left up/right down)	12	-21.00	4.00	-6.3333	9.03864
	Shoulder: Apley Test (right up/left down)	12	-21.00	4.00	-6.3750	8.78823
	Valid N (list wise)	12				
Age group 10-14 years	Shoulder: Apley Test (left up/right down)	26	-25.00	5.00	-5.6154	8.71930
	Shoulder: Apley Test (right up/left down)	26	-24.00	6.00	-3.4038	7.77434
	Valid N (list wise)	26				

Age group 15- 20 years	Shoulder: Apley Test (left up/right down)	21	-36.00	6.00	-11.5714	13.46596
	Shoulder: Apley Test (right up/left down)	21	-32.00	5.00	-9.0000	11.27830
	Valid N (list wise)	21				

Facts

• We will see a flexibility with negative values for all age groups with both right-hand-high and left-hand-high.

• The flexibility with the most positive values is found in the age group 5-9 and 10-14 years, both for the right-up and for the left-up, and in the age group 15-20 years, a decrease in the level of flexibility begins in SOA athletes.

• For the age group of 5-9 years, there is no change in flexibility in the athletes, both in the right-high and left-high hand, while for the age groups 10-14 and 15-20 years, we will see that the athletes have a better flexibility when the hand upper right/lower left than upper left/lower right.

Table no. 5 shows the average values and standard deviation (minimum and maximum value) of balance tests with eyes closed/open and right/left leg up according to age groups for SOA athletes. Mean and standard deviation of the open-eye balance test: right/left leg for the 5-9 age group is 10.8 sec (DS 17.7)/9.8 sec (DS 16.9), for 10-14 years 25.7 sec (DS 25.1) /24 sec (DS 23.6) and for 15-20 years old 18.4 sec (DS 20.4)/14.7 sec (DS 18.1). Mean and standard deviation of balance test with eyes closed: right/left leg for 5-9 years age group is 3.7 sec (DS 4.7)/4.2 sec (DS 5.3), for 10-14 years 9.1 sec (DS 13.6) /8.5 sec (DS 9.5) and for 15-20 years old 5.6 sec (DS 6.1)/5.5 sec (DS 7.1).

Table 5: Descriptive Statistics for SOA athlete's measurement in 2023 by age category (5 years.) for balance.

Age_Category_5years		N	Minimum	Maximum	Mean	Std. Deviation
Age group 5-9 years	Single Leg Stance – Eyes Open (Right)	12	.0	60.0	10.853	17.7323
	Single Leg Stance – Eyes Open (Left)	12	.0	60.0	9.767	16.8853
	Single Leg Stance – Eyes Closed (Right)	12	.0	15.8	3.757	4.7353
	Single Leg Stance – Eyes Closed (Left)	12	.0	17.2	4.224	5.2754
	Valid N (list wise)	12				
Age group 10-14 years	Single Leg Stance – Eyes Open (Right)	27	.5	60.0	25.759	25.1036

	Single Leg Stance – Eyes Open (Left)	27	.5	60.0	24.662	23.5907
	Single Leg Stance – Eyes Closed (Right)	26	.0	55.7	9.148	13.6651
	Single Leg Stance – Eyes Closed (Left)	26	.0	39.1	8.472	9.4798
	Valid N (list wise)	26				
Age group 15- 20 years	Single Leg Stance – Eyes Open (Right)	21	.0	60.0	18.420	20.3393
	Single Leg Stance – Eyes Open (Left)	21	.0	60.0	14.679	18.1325
	Single Leg Stance – Eyes Closed (Right)	21	.0	21.2	5.616	6.1344
	Single Leg Stance – Eyes Closed (Left)	21	.0	25.0	5.537	7.0495
	Valid N (list wise)	21				

Facts

• In each age group, we will see from the results that in the balance test, SOA athletes have a better performance in standing with one leg and eyes open.

• In each age group in the standing with one leg up eyes open/closed test, athletes from the age group of 5-9 years to the age group of 10-14 years will have a progressive increase in balance, and the age of 15-20 years will be followed by a decrease in balance.

• The 10-14 age group has better balance performance for both tests.

Table no. 6 shows the average values and standard deviation (minimum and maximum value) of TUG and timed sit to stand balance tests according to age groups for SOA athletes. The mean and standard deviation of the TUG balance test for the age group 5-9 years is 9.2 seconds (SD 4.5), for 10-14 years 8.3 seconds (SD 2.6) and for 15-20 years 8.9 seconds (SD 2.6). The mean and standard deviation of the timed sit to stand balance test for the age group 5-9 years is 21.7 sec (DS 5.9), for 10-14 years 18.1 sec (DS 4.6) and for 15-20 years 21.9 sec (DS 5.3).

Table 6: Descriptive Statistics for SOA athlete's measurement in 2023 by age category (5 years.) for Timed Up (TUG) and Go and Timed Sit to Stand.

Age Category 5 years		N	Minimum	Maximum	Mean	Std. Deviation
Age group 5-9 years	TIMED UP AND GO TEST (TUG)	12	.00	15.99	9.2492	4.49017
	Timed Sit to Stand Test	12	13.98	36.71	21.6983	5.88648
	Valid N (list wise)	12				

Age group 10-14 years	TIMED UP AND GO TEST (TUG)	27	5.28	15.26	8.2678	2.60908
	Timed Sit to Stand Test	27	10.45	25.19	18.0600	4.57876
	Valid N (list wise)	27				
Age group 15- 20 years	TIMED UP AND GO TEST (TUG)	21	6.65	16.38	8.9648	2.25772
	Timed Sit to Stand Test	21	11.28	35.81	21.9643	5.26948
	Valid N (list wise)	21				

Facts

From the obtained results we conclude that in the TUG test for each age group the athletes have the same balance values.

As for the Timed Sit to Stand test, we will notice that from the age of 5-9 years to the age of 10-14 the athletes will have an improvement in balance, but with the increase in age the performance of the athletes will deteriorate again.

Table no. 7 shows the average values and the standard deviation (minimum and maximum value) of the strength test, which was measured by the Handgrip test with the right/left hand according to age groups for SOA athletes. The mean and standard deviation of the right hand strength test: for the age group 5-9 years is 6.4 kg (DS 4.3), for 10-14 years 13.8 kg (DS 7.2) and for 15-20 years 19.3 kg (DS 13.6) . While for the left hand, the average for the age group 5-9 years is 7.1 kg (DS 4.5), for 10-14 years 14.2 kg (DS 7.1) and for 15-20 years 19.1 kg (DS 14.5).

Table 7: Descriptive Statistics for SOA athlete's measurement in 2023 by age category (5 years.) for strength.

Age_Category_5years		N	Minimum	Maximum	Mean	Std. Deviation
Age group 5-9 years	Handgrip Right	12	2.40	15.60	6.4167	4.28525
	Handgrip Left	12	.00	15.50	7.0667	4.51006
	Valid N (list wise)	12				
Age group 10-14 years	Handgrip Right	29	1.70	29.80	13.8034	7.21009
	Handgrip Left	29	1.50	27.10	14.2241	7.09032
	Valid N (list wise)	29				
Age group 15- 20 years	Handgrip Right	21	2.40	47.40	19.3286	13.68898
	Handgrip Left	21	1.90	47.40	19.1524	14.48059
	Valid N (list wise)	21				

Facts

• In each age group, we will see from the given results, that SOA athletes have an equal strength performance for both the right and left hand.

• It turns out that with increasing age there is a progressive increase in strength with both hands.

• The 15-20 age group has the best strength performance.

Data in table no. 8 show the average values and the standard deviation (minimum and maximum value) of the strength tests, where it was measured by the push ups, curl test according to age groups for SOA athletes. The mean and standard deviation of the push-ups strength test for the age group 5-9 years is 24.2 sec (DS 27.2), for 10-14 years 37.4 sec (DS 24.5) and for 15-20 years 24.2 sec (DS 23). Regarding the curl ups test, the average for the age group 5-9 years is 4.2 repetitions (DS 4.4), for 10-14 years 8.8 repetitions (DS 4.5) and for 15-20 years 11 repetitions (DS 6).

Table 8: Descriptive Statistics for SO athlete's measurement in 2023 by age category (5 years.) for strength.

Age_Category_5years		N	Minimum	Maximum	Mean	Std. Deviation
Age group 5-9 years	Push ups	12	.00	80.00	24.1517	27.19677
	Curl ups	10	.00	12.00	4.2000	4.39191
	Valid N (list wise)	10				
Age group 10-14 years	Push ups	27	.00	61.00	37.3763	24.46538
	Curl ups	20	2.00	16.00	8.8000	4.54915
	Valid N (list wise)	20				
Age group 15- 20 years	Push ups	21	.00	60.00	24.2348	23.02597
	Curl ups	21	.00	28.00	11.0952	5.90682
	Valid N (list wise)	21				

Facts

• From the given results, we come to the conclusion that the 10-14-year-old age group has a better strength performance in the push-ups test, while the 15-20-year-old age group has a better performance in the curl ups test.

• From the given results we come to the conclusion that the age group 5-9 years and 15-20 years has a weak strength performance in the push ups test, while in the curl ups test the age group 5-9 years has a weaker performance.

• There is a progressive increase in strength in the curl ups test in SOA athletes according to age groups, while in the push ups test there is a progressive increase followed by a decrease again.

DESCRIPTIVE STATISTICS FOR SOA ATHLETE'S MEASUREMENT IN 2023 BY GENDER AND AGE CATEGORY (5 YEARS)

The data extracted from table no. 9 show the average values and the standard deviation (minimum and maximum value) of body weight according to gender and age groups for SOA athletes. Average body weight data for boys/girls age group 5-9 years are 27.1 kg (SD 8.3)/28.1 kg (SD 4.5), age group 10-14 years are 47.7 kg (SD 15.7)/47.7 kg (SD 17.8) and age group 15-20 years, the average body weight data shows 63.1 kg (DS 12.4)/ 54.5 kg (DS 3.2).

Table 9: Descriptive Statistics for SOA athlete's measurement in 2023 by gender and age category (5 years.) for body weight

Age_Category_5years	Gender		N	Minimum	Maximum	Mean	Std. Deviation
Age group 5-9 years	Boys	Body Weight	8	19.9	45.0	27.138	8.2524
		Valid N (list wise)	8				
	Girls	Body Weight	4	24.1	34.0	28.075	4.5324
		Valid N (list wise)	4				
Age group 10-14 years	Boys	Body Weight	13	29.4	82.6	47.662	15.7366
		Valid N (list wise)	13				
	Girls	Body Weight	14	28.0	83.5	47.736	17.8782
		Valid N (list wise)	14				
Age group 15- 20 years	Boys	Body Weight	12	44.7	85.8	63.150	12.3664
		Valid N (list wise)	12				
	Girls	Body Weight	2	52.2	56.7	54.450	3.1820
		Valid N (list wise)	2				

Facts

There is a progressive increase in body weight in SOA athletes for both boys and girls for each age group.

In the age group of 5-9 and 10-14 years, we will come to the conclusion that there is no difference in body weight between boys and girls, while at the age of 15-20 years, boys have a greater weight than girls.

The data extracted from table no. 10 show the average values and standard deviation (minimum and maximum value) of waist circumference according to gender and age groups for SOA athletes. The average waist circumference data for boys/girls for the age group 5-9 years is 59.1 cm (SD 7.6)/61 kg (SD 6.4), the age group 10-14 years is 73.4 cm (SD 13.7)/76.6 cm (SD 15.6

) and age group 15-20 years old, the average data for waist circumference shows 82.9 cm (SD 8.4) for boys and 74.5 cm (SD 4.9) for girls.

Table 10: Descriptive Statistics for SOA athlete's measurement in 2023 by gender and age category (5 years.) for waist circumference

Age_Category_5years	Gender		N	Minimum	Maximum	Mean	Std. Deviation
Age group 5-9 years	Boys	Waist Circumference	8	52.0	76.0	59.063	7.5990
		Valid N (list wise)	8				
	Girls	Waist Circumference	4	56.0	69.5	61.000	6.4420
		Valid N (list wise)	4				
Age group 10-14 years	Boys	Waist Circumference	13	59.0	107.0	73.423	13.7232
		Valid N (list wise)	13				
	Girls	Waist Circumference	14	55.5	107.0	76.643	15.6714
		Valid N (list wise)	14				
Age group 15- 20 years	Boys	Waist Circumference	12	68.7	94.0	82.892	8.4037
		Valid N (list wise)	12				
	Girls	Waist Circumference	2	71.0	78.0	74.500	4.9497
		Valid N (list wise)	2				

Facts

There is a progressive increase in waist circumference in SOA athletes for both boys and girls for each age group.

In the age group of 5-9 years, we conclude that there is no difference in waist circumference between boys and girls, while at the age of 10-14 and 15-20 years, boys have a larger waist circumference than girls.

Table no. 11 shows the mean and standard deviation of boys and girls for each age group after performing the shoulder flexibility test right / left hand, top / bottom. The average of the flexibility test for the age group 5-9 years right hand up/left down is – 8.5 cm (DS 8.6) for boys and -2.1 cm (DS 8.6) for girls, while left up/right down is -9 cm (DS 9.1) for boys and for girls -1 cm (DS 6.9). For the age group 10-14 years, the right hand up/left down is -3.4 cm (DS 7.2) for boys and -3.3 cm (DS 8.5) for girls, while the top left/right down is -5.8 cm (DS 6.7) for boys and for girls -5.5 cm (DS 10.7). For the 15-20-year-old age group, the right hand up/left down is -10.2 cm (DS 11.5) for boys and -3.7 cm (DS 9.7) for girls, while the top left/right down is -13.1 cm (DS 14.2) for boys and for girls -5 cm (DS 7.3).

Table 11: Descriptive Statistics for SOA athlete's measurement in 2023 by gender and age category (5 years.) for flexibility.

Age Category 5years	Gender		N	Minimum	Maximum	Mean	Std. Deviation
Age group 5-9 years	Boys	Shoulder: Apley Test (left up/right down)	8	-21.00	2.00	-9.0000	9.14955
		Shoulder: Apley Test (right up/left down)	8	-21.00	4.00	-8.5000	8.60233
		Valid N (list wise)	8				
	Girls	Shoulder: Apley Test (left up/right down)	4	-11.00	4.00	-1.0000	6.87992
		Shoulder: Apley Test (right up/left down)	4	-15.00	3.00	-2.1250	8.62530
		Valid N (list wise)	4				
Age group 10-14 years	Boys	Shoulder: Apley Test (left up/right down)	13	-18.00	5.00	-5.7692	6.68523
		Shoulder: Apley Test (right up/left down)	13	-15.00	6.00	-3.4231	7.22221
		Valid N (list wise)	13				
	Girls	Shoulder: Apley Test (left up/right down)	13	-25.00	4.50	-5.4615	10.66040
		Shoulder: Apley Test (right up/left down)	13	-24.00	4.00	-3.3846	8.58816
		Valid N (list wise)	13				
Age group 15- 20 years	Boys	Shoulder: Apley Test (left up/right down)	17	-36.00	6.00	-13.1176	14.26045
		Shoulder: Apley Test (right up/left down)	17	-32.00	4.00	-10.2353	11.52459
		Valid N (list wise)	17				
	Girls	Shoulder: Apley Test (left up/right down)	4	-11.50	2.50	-5.0000	7.29155
		Shoulder: Apley Test (right up/left down)	4	-16.00	5.00	-3.7500	9.70824
		Valid N (list wise)	4				

Facts

• From the obtained results, we conclude that in the age groups 5-9 and 15-20 years, girls have a better flexibility than boys, and at the age of 10-14 years, the flexibility is the same for boys and girls.

• Better flexibility for boys in the age group of 10-14 years, while for girls it is in the age group of 5-9 years.

• In the 5-9 and 10-14 age groups, both boys and girls have the same flexibility as in the right hand up/left down and vice versa, while in the 15-20 age group, both boys and girls have better flexibility when the hand right up/left down.

In the data of table no. 12 shows the mean and standard deviation of boys and girls for each age group after they have completed the eye-open/close balance test; right / left leg. Average balance test for age group 5-9 years eyes open; the right leg is 7.4 sec (DS 10.5) for boys and 17.7 sec (DS 28.3) for girls, while the left leg is 5.8 sec (DS 7.1) for boys and 17.7 sec (DS 28.3) for girls. While with eyes closed, the right leg is 3 sec (DS 3.7) for boys and 5.3 sec (DS 7.2) for girls, while the left leg is 3.5 sec (DS 4) for boys and 5.7 sec (DS 7.8) for girls. For the age group 10-14 years old, eyes open; the right leg is 30.2 sec (DS 26.5) for boys and 20.7 sec (DS 24) for girls, while the left leg is 29.2 sec (DS 23.4) for boys and 20.5 sec (DS 23.8) for girls. While for eyes closed, the right leg is 14.5 sec (DS 17.5) for boys and 3.8 sec (DS 4.4) for girls, while the left leg is 9.3 sec (DS 8.1) for boys and 7.6 sec (DS 10.9) for girls. For the 15-20-year-old age group, eyes open; the right leg is 19.1 sec (DS 22.3) for boys and 15.4 sec (DS 9.7) for girls, while the left leg is 15 sec (DS 19.5) for boys and 13.5 sec (DS 12.3) for girls. While for eyes closed, the right leg is 4.4 sec (DS 5.8) for boys and 10.7 sec (DS 5.7) for girls, while the left leg is 4.1 sec (DS 5.8) for boys and 11.9 sec (DS 9.5) for girls.

Table 12: Descriptive Statistics for SOA athlete's measurement in 2023 by gender and age category (5 years.) for balance.

Age_Category_5years	Gender		N	Minimum	Maximum	Mean	Std. Deviation
Age group 5-9 years	Boys	Single Leg Stance – Eyes Open (Right)	8	.0	30.3	7.401	10.4516
		Single Leg Stance – Eyes Open (Left)	8	.0	19.7	5.788	7.1042
		Single Leg Stance – Eyes Closed (Right)	8	.0	7.4	3.000	3.3670
		Single Leg Stance – Eyes Closed (Left)	8	.0	9.9	3.536	3.9845
		Valid N (list wise)	8				
	Girls	Single Leg Stance – Eyes Open (Right)	4	.0	60.0	17.758	28.3321
		Single Leg Stance – Eyes Open (Left)	4	.0	60.0	17.725	28.3016
		Single Leg Stance – Eyes Closed (Right)	4	.0	15.8	5.270	7.1544

		Single Leg Stance – Eyes Closed (Left)	4	.0	17.2	5.600	7.8239
		Valid N (list wise)	4				
Age group 10-14 years	Boys	Single Leg Stance – Eyes Open (Right)	13	2.4	60.0	30.166	26.4922
		Single Leg Stance – Eyes Open (Left)	13	1.0	60.0	29.151	23.4336
		Single Leg Stance – Eyes Closed (Right)	13	.0	55.7	14.469	17.5479
		Single Leg Stance – Eyes Closed (Left)	13	.0	25.3	9.330	8.1293
		Valid N (list wise)	13				
	Girls	Single Leg Stance – Eyes Open (Right)	14	.5	60.0	21.666	23.9806
		Single Leg Stance – Eyes Open (Left)	14	.5	60.0	20.494	23.8180
		Single Leg Stance – Eyes Closed (Right)	13	.0	13.0	3.828	4.4455
		Single Leg Stance – Eyes Closed (Left)	13	.0	39.1	7.614	10.9336
		Valid N (list wise)	13				
Age group 15- 20 years	Boys	Single Leg Stance – Eyes Open (Right)	17	.0	60.0	19.123	22.2834
		Single Leg Stance – Eyes Open (Left)	17	.0	60.0	14.965	19.5491
		Single Leg Stance – Eyes Closed (Right)	17	.0	21.2	4.421	5.7333
		Single Leg Stance – Eyes Closed (Left)	17	.0	21.3	4.063	5.7605
		Valid N (list wise)	17				
	Girls	Single Leg Stance – Eyes Open (Right)	4	10.0	30.0	15.430	9.7421
		Single Leg Stance – Eyes Open (Left)	4	3.0	30.0	13.462	12.2981
		Single Leg Stance – Eyes Closed (Right)	4	3.4	17.4	10.698	5.7478
		Single Leg Stance – Eyes Closed (Left)	4	4.0	25.0	11.800	9.4715
		Valid N (list wise)	4				

Facts

• In the obtained results, we conclude that SOA athletes have better balance in the standing test with one leg up right/left with eyes open for both boys and girls for each age group.

• In the age group 5-9 years, girls have a better balance than boys in standing tests with one leg right/left high with eyes open/closed, in the age group 10-14 years, boys have better balance than girls and in the age group 15-20 years old, boys are better than girls in the standing test with one leg open, while girls are better in the standing test with one leg closed.

• The 10-14-year-old boys and girls have the best balance in the standing test with one leg right/left eyes open, the best balance in the standing test with one leg up right/left eyes closed the age group 15- 20-year-old girls and 10-14-year-old boys.

Table no. 13 shows the average values and standard deviation (minimum and maximum value) of balance tests according to TUG and timed sit to stand according to gender and age groups for SOA athletes. The mean and standard deviation of the TUG balance test for the age group 5-9 years is 8.6 sec (SD 4.6) for boys and 10.6 sec (SD 7) for girls, for the age of 10-14 years 7.8 sec (SD 2) for boys and 8.7 sec (DS 3.1) for girls and for the age of 15-20 years 8.9 sec (DS 2.5) boys and for girls 9 sec (DS 1.2).

The mean and standard deviation of the timed sit to stand balance test for the age group 5-9 years is 21.9 sec (SD 7) for boys and 21.4 sec (SD 3.7) for girls, for the age 10-14 years 19 sec (SD 4) for boys and 17.2 sec (DS 5.1) for girls and for 15-20 years old 22 sec (DS 5.6) boys and for girls 21.9 sec (DS 4).

Table 13: Descriptive Statistics for SOA athlete's measurement in 2023 by gender and age category (5 years.) for balance.

Age Category 5years	Gender		N	Minimum	Maximum	Mean	Std. Deviation
Age group 5-9 years	Boys	TIMED UP AND GO TEST (TUG)	8	.00	15.83	8.5675	4.56417
		Timed Sit to Stand Test	8	13.98	36.71	21.8662	6.97694
		Valid N (list wise)	8				
	Girls	TIMED UP AND GO TEST (TUG)	4	6.36	15.99	10.6125	4.64772
		Timed Sit to Stand Test	4	16.80	25.65	21.3625	3.63945
		Valid N (list wise)	4				

Age group 10-14 years	Boys	TIMED UP AND GO TEST (TUG)	13	5.28	11.28	7.7654	1.93580
		Timed Sit to Stand Test	13	12.76	25.00	18.9731	3.90441
		Valid N (list wise)	13				
	Girls	TIMED UP AND GO TEST (TUG)	14	5.56	15.26	8.7343	3.10946
		Timed Sit to Stand Test	14	10.45	25.19	17.2121	5.12351
		Valid N (list wise)	14				
Age group 15- 20 years	Boys	TIMED UP AND GO TEST (TUG)	17	6.65	16.38	8.9453	2.46659
		Timed Sit to Stand Test	17	11.28	35.81	21.9912	5.63177
		Valid N (list wise)	17				
	Girls	TIMED UP AND GO TEST (TUG)	4	7.25	10.05	9.0475	1.23376
		Timed Sit to Stand Test	4	16.40	26.00	21.8500	3.99228
		Valid N (list wise)	4				

Facts

- From the observation of the results of the table, we see that in the age group 5-9 years old boys have a better balance than girls in the timed up and go test, while in the age groups 10-14 and 15-20 years old the balance is the same for SOA athletes .
- In the timed sit to stand test, we will notice that all age groups, boys and girls, will have the same balance.
- In the timed sit to stand test, the 10-14-year-old boys and girls perform better.

Table no. 14 shows the average values and the standard deviation (minimum and maximum value) of the strength test, which was measured by the Handgrip test with the right/left hand according to gender and age groups for SOA athletes. The mean and standard deviation of the right hand strength test boys/girls: for the age group 5-9 years is 4.7 kg (DS 2)/9.7 kg (DS 6), for 10-14 years 16.1 kg (DS 7.1)/12 kg (DS 7) and for 15-20 years 21 kg (DS 14.4)/12.4 kg (DS 8.3). While for the left hand the average boys/girls for the age group 5-9 years is 5.9 kg (DS 4.5)/9.4 kg (DS 4.1), for 10-14 years 17.1 kg (DS 7.1)/11.9 kg (DS 6.4) and for age 15-20 years 21.3 kg (DS 15)/10.2 kg (DS 8.3).

Table 14: Descriptive Statistics for SOA athlete's measurement in 2023 by gender and age category (5 years.) for strength.

Age Category 5years	Gender		N	Minimum	Maximum	Mean	Std. Deviation
Age group 5-9 years	Boys	Handgrip Right	8	2.40	7.80	4.7750	2.05965
		Handgrip Left	8	.00	15.50	5.9000	4.49253
		Valid N (list wise)	8				
	Girls	Handgrip Right	4	4.10	15.60	9.7000	5.98944
		Handgrip Left	4	4.30	13.50	9.4000	4.07431
		Valid N (list wise)	4				
Age group 10-14 years	Boys	Handgrip Right	13	1.80	29.80	16.1231	7.08086
		Handgrip Left	13	1.60	27.10	17.1231	7.06260
		Valid N (list wise)	13				
	Girls	Handgrip Right	16	1.70	29.80	11.9188	6.96249
		Handgrip Left	16	1.50	24.30	11.8687	6.38255
		Valid N (list wise)	16				
Age group 15- 20 years	Boys	Handgrip Right	17	2.40	47.40	20.9529	14.37224
		Handgrip Left	17	2.30	47.40	21.2706	14.96833
		Valid N (list wise)	17				
	Girls	Handgrip Right	4	4.00	20.20	12.4250	8.31239
		Handgrip Left	4	1.90	18.70	10.1500	8.33647
		Valid N (list wise)	4				

Facts

From the obtained results we see that in the handgrip test in the age group 5-9 years girls have better performance of strength than boys, while in other age groups boys have better performance than girls.

Another result is that in both sexes the strength is the same in the right hand and in the left hand.

The best performance of strength with the right hand has the age group 15-20 years old in both sexes, while with the left hand it has the age group 15-20 years old boys and for girls 10-14 years old.

Table no. 15 shows the average values and the standard deviation (minimum and maximum value) of the strength test, where it was measured by the test: push ups and curl ups, according to gender and age groups for SOA athletes. The mean and standard deviation of the push ups test boys/girls: for the age group 5-9 years is 18.3 sec (SD 26.3) for boys and 35.9 sec (SD 28.8) girls, for 10-14 years 42.6 sec (SD 22.3) boys and 32.5 sec (DS 26.2) girls and for the 15-20 age group 25.3 sec (DS 24.7) boys and girls 19.8 sec (DS 16).

While for the curl ups test, the average for boys and girls for the age group 5-9 years is 2.2 repetitions (DS 2.9) boys and 9 (DS 3.6) girls, for 10-14 years 9.7 repetitions (DS 5) boys and 7.4 repetitions (DS 3.6) girls and for the age of 15-20 years boys 11.6 repetitions (DS 6.2) girls 9 repetitions (DS 4.2).

Table 15: Descriptive Statistics for SOA athlete's measurement in 2023 by gender and age category (5 years.) for strength.

Age Category 5 years	Gender		N	Minimum	Maximum	Mean	Std. Deviation
Age group 5-9 years	Boys	Push ups	8	.00	80.00	18.2925	26.25604
		Curl ups	7	.00	7.00	2.1429	2.85357
		Valid N (list wise)	7				
	Girls	Push ups	4	2.86	60.00	35.8700	28.79083
		Curl ups	3	5.00	12.00	9.0000	3.60555
		Valid N (list wise)	3				
Age group 10-14 years	Boys	Push ups	13	4.50	61.00	42.5977	22.33596
		Curl ups	12	2.00	16.00	9.7500	4.99318
		Valid N (list wise)	12				
	Girls	Push ups	14	.00	60.00	32.5279	26.15364
		Curl ups	8	4.00	14.00	7.3750	3.62284
		Valid N (list wise)	8				
Age group 15- 20 years	Boys	Push ups	17	.00	60.00	25.2835	24.68048
		Curl ups	17	.00	28.00	11.5882	6.23557
		Valid N (list wise)	17				
	Girls	Push ups	4	.00	36.76	19.7775	15.91354
		Curl ups	4	4.00	13.00	9.0000	4.24264
		Valid N (list wise)	4				

Facts

In the curl ups test in boys we will notice that there will be a progressive increase in strength for SOA athletes.

In the age group of 14-19 and 15-20 years, the boys have a better performance than the girls in the push-ups test, the exception is the age of 5-9 years as the girls will have a better performance than the boys, the same conclusion is for the test curl ups.

In the push ups test, the best age group is 14-19 years old boys and 5-9 years old girls, while in the curl ups test, the best age group is 15-20 years old boys and girls will have the same result for each age group.

DESCRIPTIVE STATISTICS FOR SO ATHLETE'S MEASUREMENT IN ALBANIA 2023 BY AGE CATEGORY 2 (YEARS)

The data extracted from table no. 16 show the average values and standard deviation (minimum and maximum value) of body weight according to age groups for SOA athletes. The average body weight data for the age group 5-6 years is 28.5 kg (SD 14.3), the age group 7-8 years is 27.1 kg (SD 4.5), the age group 9-10 years is 36.4 kg (SD 12.7), the age group 11-12 years old are 41.1 kg (DS 12.8), the age group 13-14 years old are 56.3 kg (DS 16.3), the age group 15-16 years old are 60.5 kg (DS 9.4), the age group 17-18 years old are 44.7 kg, the age group 19-20 years old are 65 kg (DS 14) and for the age group +21 years old the average and standard deviation are 78 kg.

Tabela nr.16: Descriptive Statistics for SO athlete's measurement in Albania 2023 by age category (2 years) for body weight.

Age Category 2 years		N	Minimum	Maximum	Mean	Std. Deviation
5- 6 years	Body Weight	3	19.9	45.0	28.500	14.2937
	Valid N (list wise)	3				
7- 8 years	Body Weight	7	22.1	34.0	27.100	4.4505
	Valid N (list wise)	7				
9- 10 years	Body Weight	10	25.0	66.4	36.350	12.7669
	Valid N (list wise)	10				
11- 12 years	Body Weight	6	28.5	63.3	41.183	12.8015
	Valid N (list wise)	6				
13- 14 years	Body Weight	13	28.4	83.5	56.269	16.3311
	Valid N (list wise)	13				
15- 16 years	Body Weight	8	49.3	71.9	60.488	9.3811
	Valid N (list wise)	8				
17- 18 years	Body Weight	1	44.7	44.7	44.700	.
	Valid N (list wise)	1				
19- 20 years	Body Weight	4	55.5	85.8	64.975	14.0327
	Valid N (list wise)	4				
21+ years	Body Weight	1	78.2	78.2	78.200	.
	Valid N (list wise)	1				

Facts

There is a progressive increase in body weight in SOA athletes for each age group.

The data extracted from table no. 17 show the average values and standard deviation (minimum and maximum value) of waist circumference according to age groups for SOA athletes. The average waist circumference data for the 5-6 year old age group is 60.7 cm (DS 13.3), the 7-8 year old age group is 59.4 cm (DS 5.2), the 9-10 year old age group is 69.7 cm (DS 14), the 11- 12-year-olds are 68 cm (DS 13.5), 13-14-year-olds are 80.2 cm (DS 14.2), 15-16-year-olds are 80.5 cm (DS 7.9), 17-18-year-olds are 68 cm, 19-20-year-olds are 84.8 cm (SD 7.4) and for the age group +21 years old the average and standard deviation are 78 cm.

Tabela nr.17: Descriptive Statistics for SO athlete's measurement in Albania 2023 by age category (2 years) for waist circumference.

Age_Category_2years		N	Minimum	Maximum	Mean	Std. Deviation
5- 6 years	Waist Circumference	3	52.0	76.0	60.667	13.3167
	Valid N (list wise)	3				
7- 8 years	Waist Circumference	7	54.0	69.5	59.429	5.1513
	Valid N (list wise)	7				
9- 10 years	Waist Circumference	10	55.5	103.0	69.650	14.0179
	Valid N (list wise)	10				
11- 12 years	Waist Circumference	6	56.0	92.0	67.917	13.4700
	Valid N (list wise)	6				
13- 14 years	Waist Circumference	13	64.0	107.0	80.154	14.2352
	Valid N (list wise)	13				
15- 16 years	Waist Circumference	8	71.0	92.0	80.500	7.8740
	Valid N (list wise)	8				
17- 18 years	Waist Circumference	1	68.7	68.7	68.700	.
	Valid N (list wise)	1				
19- 20 years	Waist Circumference	4	76.0	94.0	84.750	7.3993
	Valid N (list wise)	4				
21+ years	Waist Circumference	1	92.0	92.0	92.000	.
	Valid N (list wise)	1				

Facts

From the data in the table, it appears that there is a progressive increase in waist circumference based on increasing age. We see that from the age of 5-8 years there is a stability in the waist circumference, also at the age of 9-12 years there is an increase in the waist circumference but stable and the same result is seen in the age group of 13-16 years. In conclusion, we see that there is a stability of waist circumference in the age groups up to two years and then a progressive increase begins in the following age groups.

The data extracted from table no. 18 show the average values and the standard deviation (minimum and maximum value) of flexibility according to age groups for SOA athletes. Average left hand up/right down flexibility data for 5-6 year old age group is -2 cm (DS 5.3), 7-8 year old age group is -10.6 cm (DS 9.3), 9-10 year old age group is -1.2 cm (DS 5.4), the age group 11-12 years old are -5.2 cm (DS 8.5), the age group 13-14 years old are -7.7 cm (DS 10), the age group 15-16 years old are -13.1 cm (DS 12.6), the age group 17 -18 year olds are -10.8 cm (SD 16.6), 19-20 year olds are -12.4 cm (SD 14.7) and for the +21 age group, the average and standard deviation are 6 cm. As for the right hand up/left down average data for the 5-6 year old age group is -0.6 cm (DS 5), the 7-8 year old age group is -11.4 cm (DS 7.7), the 9-10 year old age group is -0.7 cm (DS 10), the age group 11-12 years old are -4.7 cm (DS 10.8), the age group 13-14 years old are -3.7 cm (DS 7.8), the age group 15-16 years old are -9.2 cm (DS 11.4), the age group 17- 18-year-olds are -9.5 cm (SD 9.4), 19-20-year-olds are -10.8 cm (SD 14) and for the +21-year-old age group, the average and standard deviation are 4 cm.

Table 18: Descriptive Statistics for SOA athlete's measurement in 2023 by age category (2 years.) for flexibility.

Age Category 2years		N	Minimum	Maximum	Mean	Std. Deviation
5- 6 years	Shoulder: Apley Test (left up/right down)	3	-8.00	2.00	-2.0000	5.29150
	Shoulder: Apley Test (right up/left down)	3	-6.00	4.00	-.6667	5.03322
	Valid N (list wise)	3				
7- 8 years	Shoulder: Apley Test (left up/right down)	7	-21.00	3.00	-10.5714	9.25306
	Shoulder: Apley Test (right up/left down)	7	-21.00	1.00	-11.4286	7.69972
	Valid N (list wise)	7				
9- 10 years	Shoulder: Apley Test (left up/right down)	9	-11.00	4.00	-1.2222	5.44926
	Shoulder: Apley Test (right up/left down)	9	-11.00	4.00	-.7222	4.98191
	Valid N (list wise)	9				
11- 12 years	Shoulder: Apley Test (left up/right down)	6	-20.00	2.00	-5.1667	8.54205
	Shoulder: Apley Test (right up/left down)	6	-24.00	4.00	-4.6667	10.83820
	Valid N (list wise)	6				

13- 14 years	Shoulder: Apley Test (left up/right down)	13	-25.00	5.00	-7.6923	9.96356
	Shoulder: Apley Test (right up/left down)	13	-17.00	6.00	-3.7308	7.77447
	Valid N (list wise)	13				
15- 16 years	Shoulder: Apley Test (left up/right down)	11	-36.00	2.50	-13.0909	12.60321
	Shoulder: Apley Test (right up/left down)	11	-29.00	5.00	-9.1818	11.43519
	Valid N (list wise)	11				
17- 18 years	Shoulder: Apley Test (left up/right down)	4	-32.00	3.00	-10.7500	16.64081
	Shoulder: Apley Test (right up/left down)	4	-16.00	4.00	-9.5000	9.43398
	Valid N (list wise)	4				
19- 20 years	Shoulder: Apley Test (left up/right down)	5	-32.00	4.00	-12.4000	14.72413
	Shoulder: Apley Test (right up/left down)	5	-32.00	2.00	-10.8000	13.98928
	Valid N (list wise)	5				
21+ years	Shoulder: Apley Test (left up/right down)	1	6.00	6.00	6.0000	.
	Shoulder: Apley Test (right up/left down)	1	4.00	4.00	4.0000	.
	Valid N (list wise)	1				

Facts

From the results of the flexibility test, we notice that in the age groups 5-6 years, 9-10 years, 13-14 years and 15-16 years, a significant difference is reported with lower values for upper right/lower left, the opposite happens in the age group of 9-10 years. As for the age groups 7-8 years, 11-12 years, 17-18 years and below, the results of both tests follow approximate values.

Better performance of flexibility is seen in the age groups 5-6 and 9-10 years, while in the other age groups we will see a deterioration of flexibility with increasing age.

Table no. 19 shows the average values and standard deviation (minimum and maximum value) of balance tests with eyes closed/open and right/left leg up according to age groups for SOA athletes. Mean and standard deviation of balance test with eyes open: right/left leg for age

group 5-6 are 16.1 sec (DS 13.5)/ 12.2 sec (DS 8.5), age group 7-8 are 2 sec (DS 2.5)/ 2.1 sec (DS 21), the age group 9-10 years are 26.4 sec (DS 25.2)/ 23.2 sec (DS 23), the age group 11-12 years are 28.1 sec (DS 21.5)/22.4 sec (DS 20.4), the age group 13-14 year olds are 25.3 sec (DS 28.5)/28.1 sec (DS 27.4), 15-16 year olds are 16 sec (DS 18)/12.4 sec (DS 18.2), 17-18 year olds are 10.3 sec (DS 13.2)/10.3 sec (DS 13.1), the 19-20 age group is 22 sec (DS 24.5)/14.1 sec (DS 11.7) and for the +21 age group the average and standard deviation are 60 sec/60 sec. Mean and standard deviation of balance test with eyes closed: right/left leg for age group 5-6 are 5.5 sec (DS 1.5)/7.3 sec (DS 2.3), age group 7-8 are 1.5 sec (DS 2.9)/1.2 sec (DS 2.4), the age group 9-10 years old are 7.7 sec (DS 7.2)/6.2 sec (DS 7), the age group 11-12 years old are 5.9 sec (DS 3.6)/10.1 sec (DS 8.2), the age group 13-14 year olds are 11.6 sec (DS 18.5)/9.5 sec (DS 11.3), 15-16 year olds are 7.6 sec (DS 7.5)/7.2 sec (DS 8.7), 17-18 age group are 1.9 sec (DS 1.7)/1.8 sec (DS 1.7), the 19-20 age group is 4 sec (DS 4)/3.5 sec (DS 3.4) and for the +21 age group the average and standard deviation are 6.7 sec/12.5 sec.

Table 19: Descriptive Statistics for SOA athlete's measurement in 2023 by age category (2 years.) for balance.

Age Category 2years		N	Minimum	Maximum	Mean	Std. Deviation
5- 6 years	Single Leg Stance – Eyes Open (Right)	3	3.3	30.3	16.113	13.5585
	Single Leg Stance – Eyes Open (Left)	3	3.0	19.7	12.180	8.4729
	Single Leg Stance – Eyes Closed (Right)	3	4.3	7.3	5.543	1.5578
	Single Leg Stance – Eyes Closed (Left)	3	5.8	9.9	7.283	2.2977
	Valid N (list wise)	3				
7- 8 years	Single Leg Stance – Eyes Open (Right)	7	.0	7.0	2.044	2.5453
	Single Leg Stance – Eyes Open (Left)	7	.0	5.1	2.123	2.1244
	Single Leg Stance – Eyes Closed (Right)	7	.0	7.4	1.520	2.8530
	Single Leg Stance – Eyes Closed (Left)	7	.0	6.4	1.237	2.4389
	Valid N (list wise)	7				
9- 10 years	Single Leg Stance – Eyes Open (Right)	10	1.2	60.0	26.432	25.2615

	Single Leg Stance – Eyes Open (Left)	10	3.6	60.0	23.214	22.9654
	Single Leg Stance – Eyes Closed (Right)	9	.0	18.5	7.744	7.2012
	Single Leg Stance – Eyes Closed (Left)	9	.0	19.0	6.233	7.0182
	Valid N (list wise)	9				
11- 12 years	Single Leg Stance – Eyes Open (Right)	6	2.0	60.0	28.140	21.5789
	Single Leg Stance – Eyes Open (Left)	6	2.0	60.0	22.380	20.4281
	Single Leg Stance – Eyes Closed (Right)	6	1.0	10.0	5.860	3.6257
	Single Leg Stance – Eyes Closed (Left)	6	1.0	25.3	10.068	8.2180
	Valid N (list wise)	6				
13- 14 years	Single Leg Stance – Eyes Open (Right)	13	.5	60.0	25.378	28.5418
	Single Leg Stance – Eyes Open (Left)	13	.5	60.0	28.097	27.4398
	Single Leg Stance – Eyes Closed (Right)	13	.0	55.7	11.601	18.5348
	Single Leg Stance – Eyes Closed (Left)	13	.0	39.1	9.534	11.3493
	Valid N (list wise)	13				
15- 16 years	Single Leg Stance – Eyes Open (Right)	11	.0	60.0	16.014	17.9483
	Single Leg Stance – Eyes Open (Left)	11	.0	60.0	12.423	18.2413
	Single Leg Stance – Eyes Closed (Right)	11	.0	21.2	7.637	7.5128
	Single Leg Stance – Eyes Closed (Left)	11	.0	25.0	7.180	8.8648
	Valid N (list wise)	11				
17- 18 years	Single Leg Stance – Eyes Open (Right)	4	2.0	30.0	10.275	13.2125
	Single Leg Stance – Eyes Open (Left)	4	2.5	30.0	10.338	13.1540
	Single Leg Stance – Eyes Closed (Right)	4	.0	4.0	1.860	1.6568
	Single Leg Stance – Eyes Closed (Left)	4	.0	4.0	1.830	1.6680

	Valid N (list wise)	4				
19- 20 years	Single Leg Stance – Eyes Open (Right)	5	1.0	60.0	21.912	24.5442
	Single Leg Stance – Eyes Open (Left)	5	2.3	30.0	14.050	11.6387
	Single Leg Stance – Eyes Closed (Right)	5	.0	8.7	3.942	3.9761
	Single Leg Stance – Eyes Closed (Left)	5	.0	6.9	3.494	3.3803
	Valid N (list wise)	5				
21+ years	Single Leg Stance – Eyes Open (Right)	1	60.0	60.0	60.000	.
	Single Leg Stance – Eyes Open (Left)	1	60.0	60.0	60.000	.
	Single Leg Stance – Eyes Closed (Right)	1	6.8	6.8	6.780	.
	Single Leg Stance – Eyes Closed (Left)	1	12.5	12.5	12.500	.

Facts

The same values of standing with the right leg up or left and eyes open are reported in the age groups of 7-8 years, 17-18 years and over 21 years. If we refer to other age groups such as 5-6 years, 9-10 years, 11-12 years, 13-14 years, 15-16 years and 19-20 years, we will see a better performance in standing with the right leg and eyes open versus left one leg eyes open standing test.

Meanwhile, with the exception of the 11-12-year-old age group, performing the tests with the left and right leg up, eyes closed, the same results are reported. In every age group except for the 7-8 year old age group, we will see a better performance in standing with one leg up, either right or left but with eyes open, this fact gives us the opportunity to say that there is greater stability in standing with one leg when we keep our eyes open.

Table no. 20 shows the average values and standard deviation (minimum and maximum value) of TUG and timed sit to stand balance tests according to age groups for SOA athletes. The mean and standard deviation of the TUG balance test for the age group 5-6 years 7.8 sec (SD 2.5), the age group 7-8 years are 10.6 seconds (SD 5.4), the age group 9-10 years are 8 seconds (SD 2.3), the age group 11 -12 year olds are 7.7 sec (DS 2.4), 13-14 year olds are 8.5 sec (DS 3), 15-16 year olds are 9.1 sec (DS 3.6), 17-18 year olds are 9.8 sec (DS 4.4), age group 19-20

years old are 8.6 sec (SD 1.6) and for the age group +21 years old the average and standard deviation are 7.1 sec. The mean and standard deviation of the Timed sit to stand balance test for the 5-6 year old age group is 16.5 sec (DS 4), the 7-8 year old age group is 24.7 sec (DS 5.5), the 9-10 year old age group is 19.3 sec (DS 4.4) , the age group 11-12 years old are 16.8 sec (DS 4.4), the age group 13-14 years old are 17.9 sec (DS 4.7), the age group 15-16 years old are 21.8 sec (DS 4.7), the age group 17-18 years old are 21.8 sec (DS 3.2), the age group 19-20 years old are 23.6 sec (SD 8.1) and for the age group +21 years old the average and standard deviation are 16.7 sec.

Table 20: Descriptive Statistics for SOA athlete's measurement in 2023 by age category (2 years.) for balance.

Age_Category_2years		N	Minimum	Maximum	Mean	Std. Deviation
5- 6 years	TIMED UP AND GO TEST (TUG)	3	5.08	10.00	7.8267	2.50961
	Timed Sit to Stand Test	3	13.98	21.00	16.4900	3.91409
	Valid N (list wise)	3				
7- 8 years	TIMED UP AND GO TEST (TUG)	7	.00	15.99	10.5757	5.44536
	Timed Sit to Stand Test	7	21.35	36.71	24.7300	5.48207
	Valid N (list wise)	7				
9- 10 years	TIMED UP AND GO TEST (TUG)	10	5.56	12.25	8.0420	2.30700
	Timed Sit to Stand Test	10	11.69	24.00	19.2440	4.35715
	Valid N (list wise)	10				
11- 12 years	TIMED UP AND GO TEST (TUG)	6	5.40	11.91	7.7167	2.45772
	Timed Sit to Stand Test	6	10.45	22.00	16.7917	4.38242
	Valid N (list wise)	6				
13- 14 years	TIMED UP AND GO TEST (TUG)	13	5.28	15.26	8.4608	2.90156
	Timed Sit to Stand Test	13	11.41	25.19	17.8638	4.69273
	Valid N (list wise)	13				
15- 16 years	TIMED UP AND GO TEST (TUG)	11	6.65	12.81	9.0082	1.63631

	Timed Sit to Stand Test	11	11.28	27.39	21.7691	4.70527
	Valid N (list wise)	11				
17- 18 years	TIMED UP AND GO TEST (TUG)	4	7.14	16.38	9.8425	4.37822
	Timed Sit to Stand Test	4	18.08	25.66	21.7500	3.15757
	Valid N (list wise)	4				
19- 20 years	TIMED UP AND GO TEST (TUG)	5	7.10	10.27	8.5460	1.58863
	Timed Sit to Stand Test	5	13.25	35.81	23.6280	8.08330
	Valid N (list wise)	5				
21+ years	TIMED UP AND GO TEST (TUG)	1	7.07	7.07	7.0700	.
	Timed Sit to Stand Test	1	16.65	16.65	16.6500	.
	Valid N (list wise)	1				

Facts

In the TUG test, we will notice that we will have a constant balance performance for each age group, with the exception of the 7-8 year old age group.

In the timed sit to stand test, from the results obtained, we will come to the conclusion that the best balance performance is the age group of 5-6 and 11-12 years, and the weakest performance is the age group of 7-8 and 15-16 years.

Table no. 12 shows the average values and the standard deviation (minimum and maximum value) of the strength test, which was measured by the Handgrip test with the right/left hand according to age groups for SOA athletes. The mean and standard deviation of the right hand strength test: for the age group 5-6 years are 7 kg (SD 1.3), the age group 7-8 years are 3.7 kg (SD 0.8), the age group 9-10 years are 11.1 kg (SD 6.7), age group 11-12 years old are 11.8 kg (DS 3.4), age group 13-14 years old are 17 kg (DS 7.6), age group 15-16 years old are 14.2 kg (DS 12.5), age group 17-18 years old are 20.2 kg (DS 11.1), the 19-20 age group is 24.2 kg (DS 12.5) and for the +21 age group the average and standard deviation are 47.4 kg. While the mean and standard deviation with the left hand: for the age group 5-6 years are 9.3 kg (SD 5.6), the age group 7-8 years are 4.5 kg (SD 2.5), the age group 9-10 years are 10.8 kg (SD 6.9), age group 11-12 years old are 12.4 kg (DS 3.3), age group 13-14 years old are 17.3 kg (DS 7), age group 15-16 years old are 11.8 kg (DS 12.4), age group 17-18 years old are 22.6 kg (DS 9.5),

the age group 19-20 years old is 26.9 kg (SD 12.8) and for the age group +21 years old the mean and standard deviation are 47.4 kg.

Table 21: Descriptive Statistics for SOA athlete's measurement in 2023 by age category (2 years.) for strength.

Age_Category_2years		N	Minimum	Maximum	Mean	Std. Deviation
5- 6 years	Handgrip Right	3	5.50	7.80	7.0333	1.32791
	Handgrip Left	3	4.50	15.50	9.2667	5.64476
	Valid N (list wise)	3				
7- 8 years	Handgrip Right	7	2.40	5.00	3.7429	.80800
	Handgrip Left	7	.00	8.10	4.5429	2.51850
	Valid N (list wise)	7				
9- 10 years	Handgrip Right	10	1.70	18.30	11.0700	6.67234
	Handgrip Left	10	1.50	20.50	10.8200	6.91613
	Valid N (list wise)	10				
11- 12 years	Handgrip Right	7	7.60	16.50	11.7857	3.38646
	Handgrip Left	7	7.60	16.00	12.4000	3.26956
	Valid N (list wise)	7				
13- 14 years	Handgrip Right	14	3.00	29.80	16.9143	7.59918
	Handgrip Left	14	6.90	27.10	17.3357	7.04476
	Valid N (list wise)	14				
15- 16 years	Handgrip Right	11	2.40	46.00	14.2273	12.45336
	Handgrip Left	11	1.90	44.70	11.8091	12.35099
	Valid N (list wise)	11				
17- 18 years	Handgrip Right	4	6.10	33.20	20.2000	11.11485
	Handgrip Left	4	12.80	35.40	22.6000	9.48964
	Valid N (list wise)	4				
19- 20 years	Handgrip Right	5	13.10	44.00	24.2400	12.53367
	Handgrip Left	5	13.10	46.10	26.9000	12.83900
	Valid N (list wise)	5				
21+ years	Handgrip Right	1	47.40	47.40	47.4000	.
	Handgrip Left	1	47.40	47.40	47.4000	.
	Valid N (list wise)	1				

Facts

In the handgrip test, we come to the conclusion that we have the same strength for each age group, with the exception of the 15-16, 17-18, 19-20 year old age group, as we will notice that there will be a difference between the right and left hand.

At the age of 15-16 years, we will see that athletes have greater strength with their right hand, while the opposite happens in the age group of 17-18 and 19-20 years, where athletes have greater strength with their left hand.

We will come to the conclusion that in the right and left hand from the age group of 5-6 to 15-16 years the athletes will have a decrease and increase in strength, and from the age group of 15-16 and increasing the strength of the athletes will have an increase progressive.

Table no. 22 shows the average values and standard deviation (minimum and maximum value) of push ups and curl ups strength tests according to age groups for SOA athletes. The mean and standard deviation of the push-ups strength test for the 5-6 year old age group is 36.7 sec (DS 39), the 7-8 year old age group is 8.5 sec (DS 7.5), the 9-10 year old age group is 39 sec (DS 28), the age group 11-12 year olds are 37.2 sec (DS 25.1), 13-14 year olds are 39.7 sec (DS 22.9), 15-16 year olds are 16.2 sec (DS 17.3), 17-18 year olds are 31.5 sec (DS 33) , the age group 19-20 years old are 29 sec (SD 22.5) and for the age group +21 years old the average and standard deviation are 60 sec. The mean and standard deviation of the curl up strength test for the age group 5-6 years 3.5 repetitions (DS 5), the age group 7-8 years are 3.5 repetitions (DS 4.3), the age group 9-10 years are 7.2 repetitions (DS 3.5), the age group 11-12 year olds are 9.5 repetitions (DS 4.1), 13-14 year olds are 9.5 repetitions (DS 5.1), 15-16 year olds are 8.7 repetitions (DS 5.1), 17-18 year olds are 12.5 repetitions (DS 3.3) , the age group 19-20 years old are 14.2 repetitions (DS 8.1) and for the age group +21 years old the average and standard deviation are 16 repetitions.

Table 22: Descriptive Statistics for SOA athlete's measurement in 2023 by age category (2 years.) for strength.

Age_Category_2years		N	Minimum	Maximum	Mean	Std. Deviation
5- 6 years	Push ups	3	4.18	80.00	36.7267	39.03158
	Curl ups	2	.00	7.00	3.5000	4.94975
	Valid N (list wise)	2				
7- 8 years	Push ups	7	.00	20.62	8.5200	7.46482
	Curl ups	7	.00	12.00	3.5714	4.31498
	Valid N (list wise)	7				
9- 10 years	Push ups	10	.00	60.00	39.0150	28.00093
	Curl ups	6	2.00	10.00	7.1667	3.48807
	Valid N (list wise)	6				
11- 12 years	Push ups	6	.00	60.00	37.1833	25.11497
	Curl ups	4	5.00	13.00	9.5000	4.12311
	Valid N (list wise)	4				

13- 14 years	Push ups	13	.00	61.00	39.6854	22.87543
	Curl ups	11	3.00	16.00	9.5455	5.08652
	Valid N (list wise)	11				
15- 16 years	Push ups	11	.00	51.00	16.1945	17.30301
	Curl ups	11	.00	15.00	8.7273	5.08116
	Valid N (list wise)	11				
17- 18 years	Push ups	4	.00	60.00	31.5000	33.00000
	Curl ups	4	8.00	15.00	12.5000	3.31662
	Valid N (list wise)	4				
19- 20 years	Push ups	5	5.12	60.00	28.9580	22.52797
	Curl ups	5	8.00	28.00	14.2000	8.13634
	Valid N (list wise)	5				
21+ years	Push ups	1	60.00	60.00	60.0000	.
	Curl ups	1	16.00	16.00	16.0000	.
	Valid N (list wise)	1				

Facts

In the push ups test, we will come to the conclusion that the strength in athletes will change by having ups and downs from age group to age group.

The best performance for the push ups test is in the 9-10 and 13-14 age group, and the weakest in the 7-8 age group.

The curl ups test SOA athletes will have a progressive increase in strength from age group to age group.

DESCRIPTIVE STATISTICS FOR SO ATHLETE'S MEASUREMENT IN ALBANIA 2023 BY GENDER AND AGE CATEGORY (2 YEARS)

The data extracted from table no. 23 show the average values and the standard deviation (minimum and maximum value) of body weight according to gender and age groups for SOA athletes. Average body weight data for boys/girls age group 5-6 years are 28.5 kg (DS 14.3)/-, age group 7-8 years are 26.3 kg (DS 3.8)/ 29.1 kg (DS 7), age group 9-10 years are 31.5 kg (DS 2.9)/37.6 (DS 14.1), age group 11-12 years are 38.4 kg (DS 8.5)/44 kg (DS 17.7), age group 13-14 years are 55.2 kg (DS 15)/58 kg (DS 20), age group 15-16 years old are 62.5 kg (DS 10.1)/54.5 kg (DS 3.2), age group 17-18 years old are 44.7 kg/-, age group 19-20 years old are 65 kg (DS 14)/- and for the +21 age group, the average and standard deviation are 78.2 kg/-

Tabela 23: Descriptive Statistics for SO athlete's measurement in Albania 2023 by gender and age category (2 years) for body wight.

Age Category 2 years	Gender		N	Minimum	Maximum	Mean	Std. Deviation
5- 6 years	Boys	Body Weight	3	19.9	45.0	28.500	14.2937
		Valid N (list wise)	3				
7- 8 years	Boys	Body Weight	5	22.1	31.2	26.320	3.8467
		Valid N (list wise)	5				
	Girls	Body Weight	2	24.1	34.0	29.050	7.0004
		Valid N (list wise)	2				
9- 10 years	Boys	Body Weight	2	29.4	33.5	31.450	2.8991
		Valid N (list wise)	2				
	Girls	Body Weight	8	25.0	66.4	37.575	14.1346
		Valid N (list wise)	8				
11- 12 years	Boys	Body Weight	3	32.0	48.1	38.433	8.5231
		Valid N (list wise)	3				
	Girls	Body Weight	3	28.5	63.3	43.933	17.7303
		Valid N (list wise)	3				
13- 14 years	Boys	Body Weight	8	42.0	82.6	55.175	15.0488
		Valid N (list wise)	8				
	Girls	Body Weight	5	28.4	83.5	58.020	19.9393
		Valid N (list wise)	5				
15- 16 years	Boys	Body Weight	6	49.3	71.9	62.500	10.0866
		Valid N (list wise)	6				
	Girls	Body Weight	2	52.2	56.7	54.450	3.1820
		Valid N (list wise)	2				
17- 18 years	Boys	Body Weight	1	44.7	44.7	44.700	.
		Valid N (list wise)	1				
19- 20 years	Boys	Body Weight	4	55.5	85.8	64.975	14.0327
		Valid N (list wise)	4				
21+ years	Boys	Body Weight	1	78.2	78.2	78.200	.
		Valid N (list wise)	1				

Facts

We will note that for each age group and gender we will have a progressive increase in body weight for SOA athletes.

From the age of 7-8 to 13-14 years we come to the result that girls have a greater body weight than boys, the only exception is the age group of 15-16 years where boys have a greater body weight than girls.

The data extracted from table no. 24 show the average values and standard deviation (minimum and maximum value) of waist circumference according to gender and age groups for SOA athletes. The average waist circumference data for boys/girls age group 5-6 years are 60 cm (DS 13.3)/-, age group 7-8 years are 58.1 cm (DS 3)/ 62.8 cm (DS 9.5), age group 9-10 66.5 cm (DS 9.2)/70.4 cm (DS 15.4), 11-12 year olds are 62.2 cm (DS 5.5)/73.7 cm (DS 18), 13-14 year olds are 79.4 cm (DS 14)/81.4 cm (DS 16.3), age group 15-16 years are 82.5 cm (DS 8)/74.5 kg (DS 5), age group 17-18 years are 68.7 cm/-, age group 19-20 years are 84.8 cm (DS 7.4)/ - and for the +21 age group, the average and standard deviation are 92 cm/-.

Tabela 24: Descriptive Statistics for SO athlete's measurement in Albania 2023 by gender and age category (2 years) for body wight

Age Category 2 years	Gender		N	Minimum	Maximum	Mean	Std. Deviation
5- 6 years	Boys	Waist Circumference	3	52.0	76.0	60.667	13.3167
		Valid N (list wise)	3				
7- 8 years	Boys	Waist Circumference	5	54.0	61.5	58.100	3.0496
		Valid N (list wise)	5				
	Girls	Waist Circumference	2	56.0	69.5	62.750	9.5459
		Valid N (list wise)	2				
9- 10 years	Boys	Waist Circumference	2	60.0	73.0	66.500	9.1924
		Valid N (list wise)	2				
	Girls	Waist Circumference	8	55.5	103.0	70.438	15.3958
		Valid N (list wise)	8				
11- 12 years	Boys	Waist Circumference	3	59.0	68.5	62.167	5.4848
		Valid N (list wise)	3				
	Girls	Waist Circumference	3	56.0	92.0	73.667	18.0093
		Valid N (list wise)	3				
13- 14 years	Boys	Waist Circumference	8	65.0	107.0	79.375	13.9175
		Valid N (list wise)	8				
	Girls	Waist Circumference	5	64.0	107.0	81.400	16.3034
		Valid N (list wise)	5				
15- 16 years	Boys	Waist Circumference	6	74.0	92.0	82.500	7.9183
		Valid N (list wise)	6				
	Girls	Waist Circumference	2	71.0	78.0	74.500	4.9497
		Valid N (list wise)	2				
17- 18 years	Boys	Waist Circumference	1	68.7	68.7	68.700	.
		Valid N (list wise)	1				
19- 20 years	Boys	Waist Circumference	4	76.0	94.0	84.750	7.3993
		Valid N (list wise)	4				
21+ years	Boys	Waist Circumference	1	92.0	92.0	92.000	.

	Valid N (list wise)	1				

Facts

From the results we will see that there will be a progressive increase in the waist circumference of girls from the age of 7-8 to 13-14 years, and the age of 15-16 years will be followed by a decrease in the waist circumference. In boys, we will see that they will have a fluctuation in waist circumference from age group to age group.

From the age of 7-8 to the age of 13-14, we will see that girls have a larger waist circumference than boys, while in the 15-16 age group, boys have a larger waist circumference than girls.

The data extracted from table no. 25 show the average values and the standard deviation (minimum and maximum value) of flexibility according to gender and age groups for SOA athletes. Average flexibility data for left hand up/right down for boys/girls for age group 5-6 is -2 cm (DS 5.2)/-, age group 7-8 is -13.2 cm (DS 8.6)/-4 cm (DS 9.9), 9-10 year olds are -5 cm (DS 7.1)/-0.1 cm (DS 3.6), 11-12 year olds are -4.3 cm (DS 5.7)/-6 cm (DS 12.2), age group 13-14 years old are -6.5 cm (DS 7.7)/-9.6 cm (DS 13.7), age group 15-16 years old are -17.7 cm (DS 13)/-5 cm (DS 7.3), age group 17-18 years old are -10.8 cm (DS 16.6)/-, for the 19-20 age group it is -12.4 cm (DS 14.7)/- and for the age group +21 years the average and standard deviation are 6 cm/-. As for right hand up/left down, the average data for boys/girls age group 5-6 are -0.6 cm (DS 5)/-, age group 7-8 are -13.2 cm (DS 6.5)/-7 cm (DS 11.3), age group 9-10 years old are -5.5 cm (DS 7.8)/0.6 cm (DS 3.6), age group 11-12 years old are -3.3 cm (DS 6.7)/-6 cm (DS 15.6), age group 13- 14 year olds are -3 cm (DS 8.2)/-5 cm (DS 7.8), 15-16 year olds are -12.3 cm (DS 11.8)/-3.8 cm (DS 9.7), 17-18 year olds are -9.5 cm (DS 9.4)/-, the 19-20 year old age group is -10.8 cm (DS 14)/- and for the +21 age group the average and standard deviation are 4 cm/-.

Tabela 25: Descriptive Statistics for SO athlete's measurement in Albania 2023 by gender and age category (2 years) for flexibility.

Age_Category_2years	Gender		N	Minimum	Maximum	Mean	Std. Deviation
5- 6 years	Boys	Shoulder: Apley Test (left up/right down)	3	-8.00	2.00	-2.0000	5.29150
		Shoulder: Apley Test (right up/left down)	3	-6.00	4.00	-.6667	5.03322
		Valid N (list wise)	3				

7- 8 years	Boys	Shoulder: Apley Test (left up/right down)	5	-21.00	.00	-13.2000	8.58487
		Shoulder: Apley Test (right up/left down)	5	-21.00	-3.00	-13.2000	6.57267
		Valid N (list wise)	5				
	Girls	Shoulder: Apley Test (left up/right down)	2	-11.00	3.00	-4.0000	9.89949
		Shoulder: Apley Test (right up/left down)	2	-15.00	1.00	-7.0000	11.31371
		Valid N (list wise)	2				
9- 10 years	Boys	Shoulder: Apley Test (left up/right down)	2	-10.00	.00	-5.0000	7.07107
		Shoulder: Apley Test (right up/left down)	2	-11.00	.00	-5.5000	7.77817
		Valid N (list wise)	2				
	Girls	Shoulder: Apley Test (left up/right down)	7	-11.00	4.00	-.1429	5.01427
		Shoulder: Apley Test (right up/left down)	7	-7.00	4.00	.6429	3.63678
		Valid N (list wise)	7				
11- 12 years	Boys	Shoulder: Apley Test (left up/right down)	3	-9.00	2.00	-4.3333	5.68624
		Shoulder: Apley Test (right up/left down)	3	-9.00	4.00	-3.3333	6.65833
		Valid N (list wise)	3				
	Girls	Shoulder: Apley Test (left up/right down)	3	-20.00	2.00	-6.0000	12.16553
		Shoulder: Apley Test (right up/left down)	3	-24.00	4.00	-6.0000	15.62050
		Valid N (list wise)	3				
13- 14 years	Boys	Shoulder: Apley Test (left up/right down)	8	-18.00	5.00	-6.5000	7.65320
		Shoulder: Apley Test (right up/left down)	8	-15.00	6.00	-2.9375	8.16105
		Valid N (list wise)	8				
	Girls	Shoulder: Apley Test (left up/right down)	5	-25.00	4.50	-9.6000	13.70857
		Shoulder: Apley Test (right up/left down)	5	-17.00	3.00	-5.0000	7.84219
		Valid N (list wise)	5				

15- 16 years	Boys	Shoulder: Apley Test (left up/right down)	7	-36.00	.00	-17.7143	13.02196
		Shoulder: Apley Test (right up/left down)	7	-29.00	.00	-12.2857	11.82813
		Valid N (list wise)	7				
	Girls	Shoulder: Apley Test (left up/right down)	4	-11.50	2.50	-5.0000	7.29155
		Shoulder: Apley Test (right up/left down)	4	-16.00	5.00	-3.7500	9.70824
		Valid N (list wise)	4				
17- 18 years	Boys	Shoulder: Apley Test (left up/right down)	4	-32.00	3.00	-10.7500	16.64081
		Shoulder: Apley Test (right up/left down)	4	-16.00	4.00	-9.5000	9.43398
		Valid N (list wise)	4				
19- 20 years	Boys	Shoulder: Apley Test (left up/right down)	5	-32.00	4.00	-12.4000	14.72413
		Shoulder: Apley Test (right up/left down)	5	-32.00	2.00	-10.8000	13.98928
		Valid N (list wise)	5				
21+ years	Boys	Shoulder: Apley Test (left up/right down)	1	6.00	6.00	6.0000	.
		Shoulder: Apley Test (right up/left down)	1	4.00	4.00	4.0000	.
		Valid N (list wise)	1				

Facts

From the conclusions drawn, we conclude that for the ages 7-8, 9-10 and 15-16 years, girls have a better flexibility than boys, while at the ages 11-12 and 13-14 years, boys have a better flexibility than girls.

Table no. 26 shows the average values and standard deviation (minimum and maximum value) of balance tests with eyes closed/open and right/left leg up according to gender and age groups for SOA athletes. Eyes open balance test mean and standard deviation: for boys, right/left leg for age group 5-6 are 16.1 sec (SD 13.5)/ 12.2 sec (SD 8.5), age group 7-8 are 2.2 sec (DS 2.8)/ 2 sec (DS 1.8), 9-10 year olds are 33.6 sec (DS 37.3)/19.3 sec (DS 14.5), 11-12 year olds are 23.4 sec (DS 15.7)/18.1 sec (DS 9.5)), the 13-14 age group are 31.8 sec (DS 30.1)/35.8 sec (DS 27.5), the 15-16 age group are 16.3 sec (DS 22.1)/11.8 sec (DS 21.9), the 17-18 age group are 10.3 sec (DS 13.2)/10.3 sec (DS 13.1), the 19-20 age group is 22 sec (DS 24.5)/14.1 sec

(DS 11.7) and for the +21 age group the average and standard deviation are 60 sec/60 sec. While the balance test with eyes closed: boys, right/left leg for the age group of 5-6 years are 5.5 sec (DS 1.5)/7.3 sec (DS 2.3), the age group of 7-8 years are 1.5 sec (DS 2.9)/1.3 sec (DS 2.9), 9-10 year olds are 9.3 sec (DS 13.1)/2.3 sec (DS 3.3), 11-12 year olds are 7.8 sec (DS 3.6)/12.9 sec (DS 10.6), 13-14 age group years old are 18.3 sec (DS 21.4)/9.7 sec (DS 7.7), the 15-16 age group are 5.9 sec (DS 8.2)/4.5 sec (DS 8), the 17-18 age group are 1.9 sec (DS 1.7)/1.8 sec (DS 1.7), the 19-20 age group is 4 sec (DS 4)/3.5 sec (DS 3.4) and for the +21 age group the average and standard deviation are 6.7 sec/12.5 sec. Mean and standard deviation of the balance test with eyes open and closed: for girls, right/left leg for age groups 5-6, 17-18, 19-20 and +21 years there are no female participants. While for the 7-8 year old age group, the average and standard deviation for the balance test with eyes open with the right/left leg high are 1.7 sec (DS 2.4)/2.6 sec (DS 3.6), for 9-10 year olds 24.6 sec (DS 24.6)/24.2 sec (DS 25.3), 11-12 years 32.8 sec (DS 29.2)/26.7 sec (DS 30), 13-14 years 15.1 sec (DS 25.2)/15.8 sec (DS 25.1) and for the 15-16 age group years are 16.3 sec (DS 22.1)/11.8 sec (DS 21.9). For the age group 7-8 years the mean and standard deviation for the balance test with eyes closed with the right/left leg high are 1.6 sec (DS 2.3)/1.1 sec (DS 1.6), for 9-10 years 7.3 sec (DS 6.3) /7.4 sec (DS 7.6), 11-12 years 3.9 sec (DS 2.9)/7.1 sec (DS 5.5), 13-14 years 0.9 sec (DS 0.9)/9.2 sec (DS 16.8) and for the 15-16 age group are 5.8 sec (DS 8.2)/4.5 sec (DS 8).

Tabela 26: Descriptive Statistics for SO athlete's measurement in Albania 2023 by gender and age category (2 years) for balance.

Age_Category_2years	Gender		N	Minimum	Maximum	Mean	Std. Deviation
5- 6 years	Boys	Single Leg Stance – Eyes Open (Right)	3	3.3	30.3	16.113	13.5585
		Single Leg Stance – Eyes Open (Left)	3	3.0	19.7	12.180	8.4729
		Single Leg Stance – Eyes Closed (Right)	3	4.3	7.3	5.543	1.5578
		Single Leg Stance – Eyes Closed (Left)	3	5.8	9.9	7.283	2.2977
		Valid N (list wise)	3				
7- 8 years	Boys	Single Leg Stance – Eyes Open (Right)	5	.0	7.0	2.174	2.8575
		Single Leg Stance – Eyes Open (Left)	5	.0	4.0	1.952	1.8413
		Single Leg Stance – Eyes Closed (Right)	5	.0	7.4	1.474	3.2960

		Single Leg Stance – Eyes Closed (Left)	5	.0	6.4	1.288	2.8801
		Valid N (list wise)	5				
	Girls	Single Leg Stance – Eyes Open (Right)	2	.0	3.4	1.720	2.4324
		Single Leg Stance – Eyes Open (Left)	2	.0	5.1	2.550	3.6062
		Single Leg Stance – Eyes Closed (Right)	2	.0	3.3	1.635	2.3122
		Single Leg Stance – Eyes Closed (Left)	2	.0	2.2	1.110	1.5698
		Valid N (list wise)	2				
9- 10 years	Boys	Single Leg Stance – Eyes Open (Right)	2	7.3	60.0	33.625	37.2999
		Single Leg Stance – Eyes Open (Left)	2	9.0	29.5	19.250	14.4957
		Single Leg Stance – Eyes Closed (Right)	2	.0	18.5	9.265	13.1027
		Single Leg Stance – Eyes Closed (Left)	2	.0	4.6	2.315	3.2739
		Valid N (list wise)	2				
	Girls	Single Leg Stance – Eyes Open (Right)	8	1.2	60.0	24.634	24.5608
		Single Leg Stance – Eyes Open (Left)	8	3.6	60.0	24.205	25.3469
		Single Leg Stance – Eyes Closed (Right)	7	.0	15.8	7.310	6.2881
		Single Leg Stance – Eyes Closed (Left)	7	.0	19.0	7.353	7.5702
		Valid N (list wise)	7				
11- 12 years	Boys	Single Leg Stance – Eyes Open (Right)	3	10.0	40.7	23.447	15.7147
		Single Leg Stance – Eyes Open (Left)	3	7.1	24.0	18.093	9.5293
		Single Leg Stance – Eyes Closed (Right)	3	3.7	10.0	7.823	3.5983
		Single Leg Stance – Eyes Closed (Left)	3	6.7	25.3	12.990	10.6271
		Valid N (list wise)	3				
	Girls	Single Leg Stance – Eyes Open (Right)	3	2.0	60.0	32.833	29.1733

		Single Leg Stance – Eyes Open (Left)	3	2.0	60.0	26.667	29.9555
		Single Leg Stance – Eyes Closed (Right)	3	1.0	6.8	3.897	2.8900
		Single Leg Stance – Eyes Closed (Left)	3	1.0	11.6	7.147	5.5042
		Valid N (list wise)	3				
13- 14 years	Boys	Single Leg Stance – Eyes Open (Right)	8	2.4	60.0	31.821	30.1320
		Single Leg Stance – Eyes Open (Left)	8	1.0	60.0	35.773	27.4753
		Single Leg Stance – Eyes Closed (Right)	8	3.0	55.7	18.263	21.3669
		Single Leg Stance – Eyes Closed (Left)	8	1.0	22.0	9.711	7.7151
		Valid N (list wise)	8				
	Girls	Single Leg Stance – Eyes Open (Right)	5	.5	60.0	15.068	25.2807
		Single Leg Stance – Eyes Open (Left)	5	.5	60.0	15.816	25.1280
		Single Leg Stance – Eyes Closed (Right)	5	.0	2.1	.942	.9468
		Single Leg Stance – Eyes Closed (Left)	5	.0	39.1	9.250	16.7955
		Valid N (list wise)	5				
15- 16 years	Boys	Single Leg Stance – Eyes Open (Right)	7	.0	60.0	16.347	22.1154
		Single Leg Stance – Eyes Open (Left)	7	.0	60.0	11.829	21.8591
		Single Leg Stance – Eyes Closed (Right)	7	.0	21.2	5.889	8.2305
		Single Leg Stance – Eyes Closed (Left)	7	.0	21.3	4.540	7.9849
		Valid N (list wise)	7				
	Girls	Single Leg Stance – Eyes Open (Right)	4	10.0	30.0	15.430	9.7421
		Single Leg Stance – Eyes Open (Left)	4	3.0	30.0	13.462	12.2981
		Single Leg Stance – Eyes Closed (Right)	4	3.4	17.4	10.698	5.7478
		Single Leg Stance – Eyes Closed (Left)	4	4.0	25.0	11.800	9.4715

		Valid N (list wise)	4				
17- 18 years	Boys	Single Leg Stance – Eyes Open (Right)	4	2.0	30.0	10.275	13.2125
		Single Leg Stance – Eyes Open (Left)	4	2.5	30.0	10.338	13.1540
		Single Leg Stance – Eyes Closed (Right)	4	.0	4.0	1.860	1.6568
		Single Leg Stance – Eyes Closed (Left)	4	.0	4.0	1.830	1.6680
		Valid N (list wise)	4				
19- 20 years	Boys	Single Leg Stance – Eyes Open (Right)	5	1.0	60.0	21.912	24.5442
		Single Leg Stance – Eyes Open (Left)	5	2.3	30.0	14.050	11.6387
		Single Leg Stance – Eyes Closed (Right)	5	.0	8.7	3.942	3.9761
		Single Leg Stance – Eyes Closed (Left)	5	.0	6.9	3.494	3.3803
		Valid N (list wise)	5				
21+ years	Boys	Single Leg Stance – Eyes Open (Right)	1	60.0	60.0	60.000	.
		Single Leg Stance – Eyes Open (Left)	1	60.0	60.0	60.000	.
		Single Leg Stance – Eyes Closed (Right)	1	6.8	6.8	6.780	.
		Single Leg Stance – Eyes Closed (Left)	1	12.5	12.5	12.500	.
		Valid N (list wise)	1				

Facts

From the obtained results, we conclude that for each age group and gender, the athletes have a better balance in the standing test with one leg and eyes open.

For each age group, we will see that in the test of standing with one leg up and eyes open, boys have a better balance with the right leg, excluding the age of 13-14 years where boys have better balance with the left leg and age 17 - 18 years old have the same balance with both legs.

Regarding the test of standing with one leg up with eyes closed, we will see that the boys have the same balance with both legs except for age 5-6 and 11-12 years old have a better balance with the left leg, and age 9 -10 and 13-14 years old where they have better balance with their right foot.

For each age group, we will see that in the standing test with one leg open, the girls have the same balance, except for the age of 11-12 and 15-16 years, where the girls have better balance with the right leg. Regarding the test of standing with one leg up with eyes closed, we will see that the girls have the same balance with both legs except for the age 11-12 and 13-14 years old have a better balance with the left leg, and the age 15 -16 years where they have better balance with their right leg.

Table no. 27 show the mean values and standard deviation (minimum and maximum value) of TUG and timed sit to stand balance tests according to gender and age groups for SOA athletes. The mean and standard deviation of TUG balance test for boys/girls for age group 5-6 7.8 sec (SD 2.5)/-, age group 7-8 are 9 sec (SD 5.7)/14.5 sec (SD 2.1), age group 9 -10 year olds are 8.6 sec (DS 2.2)/7.9 sec (DS 2.4), 11-12 year olds are 7.2 sec (DS 2)/8.2 sec (DS 3.2), 13-14 year olds are 7.8 sec (DS 2.1) /9.6 sec (DS 4), the 15-16 age group are 9 sec (DS 2)/9 sec (DS 1.2), the 17-18 age group are 9.8 sec (DS 4.4)/-, the 19-20 age group are 8.6 sec (SD 1.6)/- and for the +21 age group the average and standard deviation are 7.1 sec/-. The mean and standard deviation of the Timed sit to stand balance test for boys/girls are for the 5-6 year old age group 16.5 sec (DS 4)/-, the 7-8 year old age group are 25.1 sec (DS 6.5)/23.8 sec (DS 2.6), the age group 9-10 years old are 23.4 sec (DS 0.8)/18.2 sec (DS 4.3), the age group 11-12 years old are 19.6 sec (DS 2.3)/14 sec (DS 4.4), the age group 13-14 years old are 17.6 sec (DS 4.1)/18.2 sec (DS 6.1), the 15-16 age group are 21.7 sec (DS 5.4)/21.9 sec (DS 4), the 17-18 age group are 21.8 sec (DS 3.2)/-, the 19- 20 years old are 23.6 sec (SD 8.1)/- and for the age group +21 years old the mean and standard deviation are 16.7 sec/-.

Tabela 27: Descriptive Statistics for SO athlete's measurement in Albania 2023 by gender and age category (2 years) for balance.

Age_Category_2years	Gender		N	Minimum	Maximum	Mean	Std. Deviation
5- 6 years	Boys	TIMED UP AND GO TEST (TUG)	3	5.08	10.00	7.8267	2.50961
		Timed Sit to Stand Test	3	13.98	21.00	16.4900	3.91409
		Valid N (list wise)	3				
7- 8 years	Boys	TIMED UP AND GO TEST (TUG)	5	.00	15.83	9.0120	5.71382
		Timed Sit to Stand Test	5	21.35	36.71	25.0920	6.54531
		Valid N (list wise)	5				

	Girls	TIMED UP AND GO TEST (TUG)	2	12.98	15.99	14.4850	2.12839
		Timed Sit to Stand Test	2	22.00	25.65	23.8250	2.58094
		Valid N (list wise)	2				
9- 10 years	Boys	TIMED UP AND GO TEST (TUG)	2	7.04	10.16	8.6000	2.20617
		Timed Sit to Stand Test	2	22.83	24.00	23.4150	.82731
		Valid N (list wise)	2				
	Girls	TIMED UP AND GO TEST (TUG)	8	5.56	12.25	7.9025	2.45690
		Timed Sit to Stand Test	8	11.69	23.40	18.2013	4.25417
		Valid N (list wise)	8				
11- 12 years	Boys	TIMED UP AND GO TEST (TUG)	3	5.40	9.40	7.2167	2.02505
		Timed Sit to Stand Test	3	17.43	22.00	19.5967	2.29417
		Valid N (list wise)	3				
	Girls	TIMED UP AND GO TEST (TUG)	3	6.23	11.91	8.2167	3.20158
		Timed Sit to Stand Test	3	10.45	18.88	13.9867	4.37569
		Valid N (list wise)	3				
13- 14 years	Boys	TIMED UP AND GO TEST (TUG)	8	5.28	11.28	7.7625	2.05644
		Timed Sit to Stand Test	8	12.76	25.00	17.6288	4.08196
		Valid N (list wise)	8				
	Girls	TIMED UP AND GO TEST (TUG)	5	5.91	15.26	9.5780	3.91421
		Timed Sit to Stand Test	5	11.41	25.19	18.2400	6.05132
		Valid N (list wise)	5				
15- 16 years	Boys	TIMED UP AND GO TEST (TUG)	7	6.65	12.81	8.9857	1.92349
		Timed Sit to Stand Test	7	11.28	27.39	21.7229	5.37803
		Valid N (list wise)	7				

	Girls	TIMED UP AND GO TEST (TUG)	4	7.25	10.05	9.0475	1.23376
		Timed Sit to Stand Test	4	16.40	26.00	21.8500	3.99228
		Valid N (list wise)	4				
17- 18 years	Boys	TIMED UP AND GO TEST (TUG)	4	7.14	16.38	9.8425	4.37822
		Timed Sit to Stand Test	4	18.08	25.66	21.7500	3.15757
		Valid N (list wise)	4				
19- 20 years	Boys	TIMED UP AND GO TEST (TUG)	5	7.10	10.27	8.5460	1.58863
		Timed Sit to Stand Test	5	13.25	35.81	23.6280	8.08330
		Valid N (list wise)	5				
21+ years	Boys	TIMED UP AND GO TEST (TUG)	1	7.07	7.07	7.0700	.
		Timed Sit to Stand Test	1	16.65	16.65	16.6500	.
		Valid N (list wise)	1				

Facts

From the obtained results, we conclude that for each age group and gender, the athletes have the same balance in the TUG test, excluding the age of 7-8 years, where boys have a better balance.

In the timed sit to stand test, we will notice that for each age group the male athletes have a better balance than the girls, except for the 13-14 and 15-16 age group, where both boys and girls have the same balance.

Table no. 28 shows the average values and the standard deviation (minimum and maximum value) of the strength test, which was measured by the Handgrip test with the right/left hand according to gender and age groups for SOA athletes. The mean and standard deviation of the strength test boys/girls right hand: for the age group 5-6 years are 7 kg (SD 1.3)/-, the age group 7-8 years are 3.4 kg (SD 0.6)/4.6 kg (SD 0.6) , age group 9-10 years are 9.3 kg (DS 10.6)/11.5 kg (DS 6.3), age group 11-12 years are 13.2 kg (DS 4.7)/10.7 kg (DS 2.1), age group 13-14 years are 18.9 kg (DS 6.1)/14.2 kg (DS 9.1), age group 15-16 years are 15.3 kg (DS 14.9)/12.4 kg (DS 8.3), age group 17-18 years are 20.2 kg (DS 11.1)/- , age group 19-20 years old are 24.2

kg (DS 12.5)/- and for the age group +21 years old the average and standard deviation are 47.4 kg/-. While the mean and standard deviation for left-handed boys/girls: for the age group 5-6 years are 9.3 kg (SD 5.6)/-, the age group 7-8 years are 3.8 kg (SD 2.4)/6.2 kg (SD 2.7), the age group 9-10 year olds are 9.1 kg (DS 10.6)/11.3 kg (DS 6.7), 11-12 year olds are 13 kg (DS 3.8)/12 kg (DS 3.3), 13-14 year olds are 20.7 kg (DS 5)/13 kg (DS 7.2), 15-16 year olds are 12.8 kg (DS 14.7)/10.2 kg (DS 8.3), 17-18 year olds are 22.6 kg (DS 9.5)/-, 19-20 year olds are 26.9 kg (DS 12.8)/- and for the age group +21 years old the average and standard deviation are 47.4 kg/-.

Tabela 28: Descriptive Statistics for SO athlete's measurement in Albania 2023 by gender and age category (2 years) for strength.

Age Category 2 years	Gender		N	Minimum	Maximum	Mean	Std. Deviation
5- 6 years	Boys	Handgrip Right	3	5.50	7.80	7.0333	1.32791
		Handgrip Left	3	4.50	15.50	9.2667	5.64476
		Valid N (list wise)	3				
7- 8 years	Boys	Handgrip Right	5	2.40	4.20	3.4200	.64962
		Handgrip Left	5	.00	6.10	3.8800	2.40562
		Valid N (list wise)	5				
	Girls	Handgrip Right	2	4.10	5.00	4.5500	.63640
		Handgrip Left	2	4.30	8.10	6.2000	2.68701
		Valid N (list wise)	2				
9- 10 years	Boys	Handgrip Right	2	1.80	16.80	9.3000	10.60660
		Handgrip Left	2	1.60	16.60	9.1000	10.60660
		Valid N (list wise)	2				
	Girls	Handgrip Right	8	1.70	18.30	11.5125	6.32849
		Handgrip Left	8	1.50	20.50	11.2500	6.66119
		Valid N (list wise)	8				
11- 12 years	Boys	Handgrip Right	3	7.80	16.50	13.2000	4.71487
		Handgrip Left	3	8.70	16.00	13.0333	3.83710
		Valid N (list wise)	3				
	Girls	Handgrip Right	4	7.60	12.50	10.7250	2.14845
		Handgrip Left	4	7.60	15.00	11.9250	3.29583
		Valid N (list wise)	4				
13- 14 years	Boys	Handgrip Right	8	9.70	29.80	18.9250	6.13136
		Handgrip Left	8	12.40	27.10	20.6625	5.03529
		Valid N (list wise)	8				
	Girls	Handgrip Right	6	3.00	29.80	14.2333	9.07847
		Handgrip Left	6	6.90	24.30	12.9000	7.22634
		Valid N (list wise)	6				

15- 16 years	Boys	Handgrip Right	7	2.40	46.00	15.2571	14.85012
		Handgrip Left	7	2.30	44.70	12.7571	14.71777
		Valid N (list wise)	7				
	Girls	Handgrip Right	4	4.00	20.20	12.4250	8.31239
		Handgrip Left	4	1.90	18.70	10.1500	8.33647
		Valid N (list wise)	4				
17- 18 years	Boys	Handgrip Right	4	6.10	33.20	20.2000	11.11485
		Handgrip Left	4	12.80	35.40	22.6000	9.48964
		Valid N (list wise)	4				
19- 20 years	Boys	Handgrip Right	5	13.10	44.00	24.2400	12.53367
		Handgrip Left	5	13.10	46.10	26.9000	12.83900
		Valid N (list wise)	5				
21+ years	Boys	Handgrip Right	1	47.40	47.40	47.4000	.
		Handgrip Left	1	47.40	47.40	47.4000	.
		Valid N (list wise)	1				

Facts

Regarding the handgrip test, we will note that male athletes have greater strength than girls, except for the 7-8 and 9-10 year old age group, girls have greater strength than boys.

In age groups 7-8 to 11-12 years old, boys have the same strength, from age 13-14 to 21+, boys have greater strength with their right hand than with their left.

For the age of 7-8 years, girls have greater strength in the left hand, at the ages of 9-10 and 11-12 years, they have the same strength in both hands, and in the age groups of 13-14 and 15-16 years, girls have more strength big with the right hand.

Table no. 29 shows the average values and standard deviation (minimum and maximum value) of push ups and curl ups strength tests according to gender and age groups for SOA athletes. The mean and standard deviation of the push-ups strength test for boys/girls for the age group of 5-6 years 36.7 sec (DS 39)/-, the age group of 7-8 years are 7.2 sec (DS 6)/11.7 sec (DS 12.6), the age group 9-10 year olds are 32.2 sec (DS 39.2)/40.7 sec (DS 27.8), 11-12 year olds are 35.7 sec (DS 21)/38.7 sec (DS 33.5), 13-14 age group are 47.8 sec (DS 20.7)/26.7 sec (DS 22), the 15-16 age group are 14.1 sec (DS 18.9)/19.8 sec (DS 16), the 17-18 age group are 9.8 sec (DS 4.4)/-, the 19-20 age group are 8.6 sec (SD 1.6)/- and for the age group +21 years old the average and standard deviation are 7.1 sec/-. The mean and standard deviation of the curl ups strength test for boys/girls are for the age group 5-6 years 3.5 repetitions (DS 5)/-, the age group 7-8 years are 1.6 repetitions (DS 2.2)/8.5 repetitions (DS 5), the age group 9-10 years

are 6 repetitions (DS 5.7)/7.8 repetitions (DS 2.9), the age group 11-12 years are 11 repetitions (DS 3.5)/5 repetitions (DS), the age group 13-14 years are 10.3 repetitions (DS 5.5)/8.3 repetitions (DS 4.6), age group 15-16 years are 8.6 repetitions (DS 5.8)/9 repetitions (DS 4.2), age group 17-18 years are 21.8 repetitions (DS 3.2)/-, age group 19-20 years are 23.6 repetitions (DS 8.1)/- and for the age group +21 years old the average and standard deviation are 16.7 repetitions/-.

Tabela 29: Descriptive Statistics for SO athlete's measurement in Albania 2023 by gender and age category (2 years) for strength.

Age Category 2 years	Gender		N	Minimum	Maximum	Mean	Std. Deviation
5- 6 years	Boys	Push ups	3	4.18	80.00	36.7267	39.03158
		Curl ups	2	.00	7.00	3.5000	4.94975
		Valid N (list wise)	2				
7- 8 years	Boys	Push ups	5	.00	16.86	7.2320	6.07455
		Curl ups	5	.00	4.00	1.6000	2.19089
		Valid N (list wise)	5				
	Girls	Push ups	2	2.86	20.62	11.7400	12.55822
		Curl ups	2	5.00	12.00	8.5000	4.94975
		Valid N (list wise)	2				
9- 10 years	Boys	Push ups	2	4.50	60.00	32.2500	39.24443
		Curl ups	2	2.00	10.00	6.0000	5.65685
		Valid N (list wise)	2				
	Girls	Push ups	8	.00	60.00	40.7063	27.77957
		Curl ups	4	4.00	10.00	7.7500	2.87228
		Valid N (list wise)	4				
11- 12 years	Boys	Push ups	3	22.10	60.00	35.7000	21.09431
		Curl ups	3	7.00	13.00	11.0000	3.46410
		Valid N (list wise)	3				
	Girls	Push ups	3	.00	60.00	38.6667	33.54599
		Curl ups	1	5.00	5.00	5.0000	.
		Valid N (list wise)	1				
13- 14 years	Boys	Push ups	8	12.00	61.00	47.7713	20.65246
		Curl ups	7	3.00	16.00	10.2857	5.52914
		Valid N (list wise)	7				
	Girls	Push ups	5	.00	60.00	26.7480	21.98764
		Curl ups	4	4.00	14.00	8.2500	4.64579
		Valid N (list wise)	4				
15- 16 years	Boys	Push ups	7	.00	51.00	14.1471	18.94521
		Curl ups	7	.00	15.00	8.5714	5.82687

		Valid N (list wise)	7				
	Girls	Push ups	4	.00	36.76	19.7775	15.91354
		Curl ups	4	4.00	13.00	9.0000	4.24264
		Valid N (list wise)	4				
17- 18 years	Boys	Push ups	4	.00	60.00	31.5000	33.00000
		Curl ups	4	8.00	15.00	12.5000	3.31662
		Valid N (list wise)	4				
19- 20 years	Boys	Push ups	5	5.12	60.00	28.9580	22.52797
		Curl ups	5	8.00	28.00	14.2000	8.13634
		Valid N (list wise)	5				
21+ years	Boys	Push ups	1	60.00	60.00	60.0000	.
		Curl ups	1	16.00	16.00	16.0000	.
		Valid N (list wise)	1				

Facts

In the push ups test, we will notice that female athletes have greater strength than boys for every age group, except for the 13-14 year old age group where boys have better performance than girls.

While in the curl ups test we will see that in the age group 7-8 girls have greater strength than boys, in 11-12 and 13-14 years old boys have greater strength than girls and in 9-10 years old they have the same performance .

Conclusions

LEVEL OF CURRENT ANTHOPOMETRIC AND MOTOR PARAMETERS OF SOA ATHLETES

Anthropometry

• There is a progressive increase in body weight and waist circumference in SOA athletes by age group.

Flexibility- Shoulder: Apley Test

• We will see a flexibility with negative values for all age groups with both right-hand-high and left-hand-high.

• The flexibility with the most positive values is found in the age group 5-9 and 10-14 years, both for the right-up and for the left-up, and in the age group 15-20 years, a decrease in the level of flexibility begins in SOA athletes.

• For the age group of 5-9 years, there is no change in flexibility in the athletes, both in the right-high and left-high hand, while for the age groups 10-14 and 15-20 years, we will see that the athletes have a better flexibility when the hand upper right/lower left than upper left/lower right.

Balance - Single Leg stand (Eyes open and closed)

• In each age group, we will see from the results that in the balance test, SOA athletes have a better performance in standing with one leg and eyes open.

• In each age group in the standing with one leg up eyes open/closed test, athletes from the age group of 5-9 years to the age group of 10-14 years will have a progressive increase in balance, and the age of 15-20 years will be followed by a decrease in balance.

• The 10-14 age group has better balance performance for both tests.

Timed Up (TUG) and Go and Timed Sit to Stand.

• From the obtained results we come to the conclusion that in the TUG test for each age group the athletes have the same balance values.

• As for the Timed Sit to Stand test, we will notice that from the age of 5-9 years to the age of 10-14, the athletes will have an improvement in balance, but with the increase in age, the performance of the athletes will deteriorate again.

Strength

• In each age group, we will see from the given results, that SOA athletes have an equal strength performance for both the right and left hand.

• It turns out that with increasing age there is a progressive increase in strength with both hands.

• The 15-20 age group has the best strength performance.

• From the given results, we come to the conclusion that the 10-14-year-old age group has a better strength performance in the push-ups test, while the 15-20-year-old age group has a better performance in the curl ups test.

• From the given results we come to the conclusion that the age group 5-9 years and 15-20 years has a weak strength performance in the push ups test, while in the curl ups test the age group 5-9 years has a weaker performance.

• There is a progressive increase in strength in the curl ups test in SOA athletes according to age groups, while in the push ups test there is a progressive increase followed by a decrease again.

LEVEL OF CURRENT ANTHOPOMETRIC AND MOTOR PARAMETERS OF SOA ATHLETES ACCORDING TO GENDER

Anthropometry

• There is a progressive increase in body weight in SOA athletes for both boys and girls for each age group.

• In the age group of 5-9 and 10-14 years, we will come to the conclusion that there is no difference in body weight between boys and girls, while at the age of 15-20 years, boys have a greater weight than girls.

• There is a progressive increase in waist circumference in SOA athletes for both boys and girls for each age group.

• In the age group of 5-9 years, we conclude that there is no difference in waist circumference between boys and girls, while at the age of 10-14 and 15-20 years, boys have a larger waist circumference than girls.

Flexibility- Shoulder: Apley Test

• From the obtained results, we conclude that in the age groups 5-9 and 15-20 years, girls have a better flexibility than boys, and at the age of 10-14 years, the flexibility is the same for boys and girls.

• Better flexibility for boys in the age group of 10-14 years, while for girls it is in the age group of 5-9 years.

• In the 5-9 and 10-14 age groups, both boys and girls have the same flexibility as in the right hand up/left down and vice versa, while in the 15-20 age group, both boys and girls have better flexibility when the hand right up/left down.

Balance - Single Leg stand (Eyes open and closed)

• In the obtained results, we conclude that SOA athletes have better balance in the standing test with one leg up right/left with eyes open for both boys and girls for each age group.

• In the age group 5-9 years, girls have a better balance than boys in standing tests with one leg right/left high with eyes open/closed, in the age group 10-14 years, boys have better balance than girls and in the age group 15-20 years old, boys are better than girls in the standing test with one leg open, while girls are better in the standing test with one leg closed.

• The 10-14-year-old boys and girls have the best balance in the standing test with one leg right/left eyes open, the best balance in the standing test with one leg up right/left eyes closed the age group 15- 20-year-old girls and 10-14-year-old boys.

Timed Up (TUG) and Go and Timed Sit to Stand.

• From the observation of the results of the table, we see that in the age group 5-9 years old boys have a better balance than girls in the timed up and go test, while in the age groups 10-14 and 15-20 years old the balance is the same for SOA athletes .

• In the timed sit to stand test, we will notice that all age groups, boys and girls, will have the same balance.

• In the timed sit to stand test, the 10-14-year-old boys and girls perform better.

Strength

• From the obtained results we see that in the handgrip test in the age group 5-9 years girls have better performance of strength than boys, while in other age groups boys have better performance than girls.

• Another result is that in both sexes the strength is the same in the right hand and in the left hand.

• The best strength performance with the right hand has the age group 15-20 years old in both sexes, while with the left hand it has the age group 15-20 years old boys and for girls 10-14 years old.

• In the curl ups test in boys we will notice that there will be a progressive increase in strength for SOA athletes.

• In the age group of 14-19 and 15-20 years, boys have a better performance than girls in the push-ups test, the exception is the age of 5-9 years, since girls will have a better performance than boys, the same conclusion is for the curl ups test.

• In the push ups test, the best age group is 14-19 years old boys and 5-9 years old girls, while in the curl ups test the age group is 15-20 years old boys and girls will have the same result for each age group.

LEVEL OF CURRENT ANTHOPOMETRIC AND MOTOR PARAMETERS OF SOA ATHLETES ACCORDING TO AGE GROUP

Anthropometry

• There is a progressive increase in body weight in SOA athletes for each age group.

• From the data in the table, it appears that there is a progressive increase in waist circumference based on increasing age. We see that from the age of 5-8 years there is a stability in the waist circumference, also at the age of 9-12 years there is an increase in the waist circumference but stable and the same result is also seen in the age group of 13-16 years.

• In conclusion, we see that there is a stability of the waist circumference in the age groups up to two years and then a progressive increase begins in the following age groups.

Flexibility- Shoulder: Apley Test

• From the result of the flexibility test, we notice that in the age groups 5-6 years, 9-10 years, 13-14 years and 15-16 years, a significant difference is reported with lower values for upper right/lower left, and vice versa occurs in the age group of 9-10 years.

• As for the age groups 7-8 years, 11-12 years, 17-18 years and below, the results of both tests follow approximate values.

• Better performance of flexibility is seen in the age groups 5-6 and 9-10 years, while in the other age groups we will see a deterioration of flexibility as age increases.

Balance - Single Leg stand (Eyes open and closed)

• The same values of standing with the right leg up or left and eyes open are reported in the age groups of 7-8 years, 17-18 years and over 21 years.

• If we refer to other age groups such as 5-6 years, 9-10 years, 11-12 years, 13-14 years, 15-16 years and 19-20 years, we will see a better performance in standing with the right leg and eyes open vs. left one leg eyes open standing test.

• Meanwhile, with the exception of the 11-12-year-old age group, performing the tests with the left and right leg up, eyes closed, the same results are reported.

• In every age group, except for the 7-8 year old age group, we will see a better performance in standing with one leg up, either right or left but with eyes open, this fact gives us the opportunity to say that there is greater stability in standing on one leg while keeping our eyes open.

Timed Up (TUG) and Go and Timed Sit to Stand.

• In the TUG test, we will notice that we will have a constant balance performance for each age group, with the exception of the 7-8 year old age group.

• In the timed sit to stand test, from the obtained results, we will come to the conclusion that the best balance performance is the age group of 5-6 and 11-12 years, and the weakest performance is the age group of 7-8 and 15-16 years.

Strength

• In the handgrip test, we come to the conclusion that we have the same strength for each age group, with the exception of the 15-16, 17-18, 19-20 year old age groups, as we will notice that there will be a difference between the right and left hand .

• At the age of 15-16 years, we will see that athletes have greater strength with their right hand, while the opposite happens in the age group of 17-18 and 19-20 years, where athletes have greater strength with their left hand.

• We will come to the conclusion that in the right and left hand from the age group of 5-6 to 15-16 years the athletes will have a decrease and increase in strength, and from the age group of 15-16 and increasing the strength of the athletes will have a progressive growth.

• In the push ups test, we will come to the conclusion that the strength of the athletes will change, having ups and downs from age group to age group.

• The best performance for the push ups test is in the 9-10 and 13-14 age group, and the weakest in the 7-8 age group.

• The curl ups test SOA athletes will have a progressive increase in strength from age group to age group.

LEVEL OF CURRENT ANTHOPOMETRICAL AND MOTOR PARAMETERS OF SOA ATHLETES ACCORDING TO GENDER AND AGE GROUP

Anthropometry

• We will notice that for each age group and gender we will have a progressive increase in body weight for SOA athletes.

• From the age of 7-8 to 13-14 years we come to the result that girls have a greater body weight than boys, the only exception is the age group of 15-16 years where boys have a greater body weight than girls.

• From the results we will see that there will be a progressive increase in the waist circumference of girls from the age of 7-8 to 13-14 years, and the age of 15-16 years will be followed by a decrease in the waist circumference. In boys, we will see that they will have a fluctuation in waist circumference from age group to age group.

• From the age of 7-8 to the age of 13-14, we will see that girls have a larger waist circumference than boys, while in the 15-16 age group, boys have a larger waist circumference than girls.

Flexibility- Shoulder: Apley Test

• From the conclusions drawn, we conclude that for ages 7-8, 9-10 and 15-16 years, girls have better flexibility than boys, while at ages 11-12 and 13-14 years, boys have more flexibility better than girls.

Balance - Single Leg stand (Eyes open and closed)

• From the obtained results, we conclude that for each age group and gender, the athletes have a better balance in the standing test with one leg and eyes open.

• For each age group, we will see that in the standing test with one leg up and eyes open, boys have a better balance with the right leg, excluding the age of 13-14 years, where boys have better balance with the left leg and age 17-18 years old have the same balance with both legs.

• Regarding the test of standing with one leg up with eyes closed, we will see that boys have the same balance with both legs, excluding the age of 5-6 and 11-12 years old, they have a better balance with the left leg, and the age 9-10 and 13-14 years where they have better balance with their right foot.

• For each age group, we will see that in the standing test with one leg with one eye open, girls have the same balance, excluding the age of 11-12 and 15-16 years, where girls have better balance with the right leg. Regarding the test of standing with one leg up with eyes closed, we will see that the girls have the same balance with both legs except for the age 11-12 and 13-14 years old have a better balance with the left leg, and the age 15 -16 years where they have better balance with their right leg.

Timed Up (TUG) and Go and Timed Sit to Stand.

• From the obtained results, we conclude that for each age group and gender, the athletes have the same balance in the TUG test, excluding the age of 7-8 years, where boys have a better balance.

• In the timed sit to stand test, we will notice that for each age group the male athletes have a better balance than the girls, except for the 13-14 and 15-16 age group, where both boys and girls have the same balance.

Strength

• Regarding the handgrip test, we will note that male athletes have greater strength than girls, except for the 7-8 and 9-10 year old age group, girls have greater strength than boys.

• In age groups 7-8 to 11-12 years old, boys have the same strength, from age 13-14 to 21+ boys have greater strength with their right hand than with their left.

• For the age of 7-8 years, girls have greater strength in their left hand, at the ages of 9-10 and 11-12 years, they have the same strength in both hands, and in the age groups of 13-14 and 15-16 years, girls have strength larger with the right hand.

• In the push ups test, we will notice that female athletes have greater strength than boys for every age group, except for the 13-14 year old age group where boys have better performance than girls.

• While in the curl ups test we will see that in the 7-8 age group girls have greater strength than boys, in 11-12 and 13-14 years old boys have greater strength than girls and in 9-10 year olds they have the same performance.

Reference

Special Olympics. FUNfitness: Learn how to Organize, Promote and Present, Updated: September 2020