



DETERMINING THE CRITERIA FOR ASSESSING PHYSICAL FITNESS FOR 13–14-YEAR-OLD MALE ATHLETES IN THE 100M FREESTYLE SWIMMING TEAM OF DONG THAP PROVINCE, VIETNAM

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Abstract:

Context: Assessing physical fitness is a crucial basis for controlling training status and guiding the training process of young swimmers. For the 100m freestyle, the requirement to achieve high speed and maintain athletic performance necessitates an assessment system tailored to age and skill level. This study aims to determine the criteria for evaluating the physical fitness of 13–14-year-old male athletes of the 100m freestyle swimming team of Dong Thap province, Vietnam. **Subjects and methods:** The study used a combination of literature analysis, expert interviews, pedagogical testing, and statistical methods. Fifteen 13-14-year-old athletes from the Dong Thap province 100m freestyle swimming team and 30 experts, coaches, lecturers, and teachers participated in two rounds of interviews to select the criteria. **Results:** From the initial 24 tests, the study identified 10 criteria with a consensus rate of 85% or higher, ensuring reliability, including 5 general fitness criteria: 1500m run (minutes), 100m low start run (seconds), standing high jump (cm), prone push-ups (results/minute), and supine sit-ups (results/minute); and 5 specialized fitness criteria: 50m butterfly stroke (seconds), 50m breaststroke (seconds), 50m backstroke (seconds), 50m freestyle (seconds), and 100m freestyle (seconds). **Conclusion:** The system of 10 criteria is scientifically sound, reliable, and suitable for the specialized characteristics of male 100m freestyle swimmers aged 13–

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14 in Dong Thap province. These criteria can be used in testing and evaluating fitness and supporting the control of the training process for young swimmers.

Keywords: assessment criteria, physical fitness, athlete, swimming, Dong Thap, Vietnam

1. Introduction

In the Olympic sports system, swimming is a sport with many competitive events, and performance depends on the combined impact of technical, physiological, biomechanical and physical factors. In particular, the development of strength, power, speed and endurance plays an important role in improving the performance of competitive swimmers (Maglischo, 2003; Aspenes & Karlsen, 2012; Wirth *et al.*, 2022) [1], [2], [3].

The 100m freestyle is a short-distance, high-intensity competitive event that requires athletes to both maximize speed and maintain effective performance throughout the entire distance. Therefore, performance depends not only on swimming technique but also on strength, muscle power, speed endurance, and the ability to mobilize and coordinate energy sources. Jin *et al.* (2024) showed that strength training has a positive impact on maximum upper limb strength and crawl performance in the 25m, 50m, 100m, and 200m distances; the improvement in performance is significantly related to the ability to increase arm stroke frequency [4]. Strzala *et al.* (2026) further confirmed that 100m crawl performance in adolescent male athletes is influenced by physiological characteristics, muscle mass, traction, and oxygen absorption kinetics; It also emphasizes the need to consider the physical development characteristics and maturity level of athletes during training [5].

For swimmers aged 13–14, this is a period when the body undergoes significant changes in morphology, physiological function, and motor skills. Physical development is influenced by both biological maturation and the content and amount of training. Therefore, accurately assessing physical fitness is important in monitoring development, identifying strengths and weaknesses, and providing a scientific basis for adjusting training. Gao *et al.* (2025) argue that short-distance freestyle swimming performance in young athletes is influenced by a combination of many strength abilities, notably upper limb strength, lower limb strength, core strength, and whole-body coordination; therefore, physical fitness assessment needs to be approached holistically and in accordance with the characteristics of the athlete [6].

In modern swimming training, fitness testing and evaluation is an important part of the training management process. Using scientifically sound criteria, appropriate to age characteristics and professional requirements, helps to objectively reflect the physical condition of athletes. A review by Fone and van den Tillaar (2022) shows that the combination of swimming training and strength training tends to be more effective than just underwater training [7]. In addition, Liu *et al.* (2025), through the analysis of 16 studies with 438 young swimmers, determined that central body stability is positively related to swimming performance, especially in short distances [8]. These results show

that the physical condition of swimmers is a multi-component structure; therefore, determining a suitable system of evaluation criteria is a necessary basis for controlling and guiding the training process.

In Dong Thap province, swimming has received significant investment and has gradually achieved positive results at national youth and age-group competitions. The pool of young athletes is a crucial foundation for maintaining and improving the province's swimming achievements in the coming years. However, practical training of 13-14 year old male athletes in the Dong Thap province's 100m freestyle swimming team reveals that the assessment of physical fitness lacks a unified system of criteria suitable for the age group and the specific requirements of the competition distance. The assessment criteria used are still dependent on coaching experience, making it difficult to comprehensively evaluate the athletes' physical fitness level and monitor their development.

On the other hand, domestic studies have researched many issues on training and evaluating the physical fitness of young swimmers, focusing on aerobic, anaerobic, speed endurance and specialized physical fitness (Do Trong Thinh, 2008; Nguyen Kieu Oanh, 2017; Huynh Thanh Ha, 2022; Vo Tan Phat, 2023) [9], [10], [11], [12]. However, through a synthesis of documents, no specific research has been found that identifies a system of criteria for evaluating the physical fitness of 13-14 year old male swimmers in the 100m freestyle team of Dong Thap province. Meanwhile, recent studies show that age, years of training, level of maturity and physiological characteristics can affect the physical fitness level and training adaptability of young athletes. Therefore, building a system of evaluation criteria suitable for each group of subjects and competition events is a requirement of scientific and practical significance.

Based on practical training requirements and the aforementioned scientific foundations, this study was conducted to determine the criteria for evaluating the physical fitness of 13-14 year old male athletes in the 100m freestyle swimming team of Dong Thap province, Vietnam. The research results contribute to providing a scientific basis for testing and evaluating physical fitness levels, monitoring athlete development, and supporting adjustments to training processes to suit age characteristics and the specific requirements of the 100m freestyle event.

2. Research Materials and Methods

2.1 Methods

2.1.1 Synthesis and Analysis of Documents

The study collected, selected, and analyzed domestic and international scientific documents related to the physical characteristics of young swimmers, the professional requirements of the 100m freestyle, and physical fitness tests in swimming training. Research works, specialized textbooks, and training materials were compared according to content, target audience, and evaluation purpose. Based on this, the study

systematized the tests used in practice and related works, serving as the basis for building an initial list of criteria to be included in the selection process.

2.1.2 Interview Method

A questionnaire-based interview method was used to gather expert opinions on the suitability of physical fitness assessment criteria for 13-14 year old male swimmers in the 100m freestyle. The interview subjects included 30 experts, coaches, lecturers, and teachers with experience in swimming and sports training.

Interviews were conducted twice with the same group of subjects, using consistent content and assessment methods. The interval between the two interviews was designed to minimize the impact on respondents' memory. The level of agreement for each criterion was compiled and compared between the two surveys. Criteria that received a selection rate of 85% or higher and demonstrated consistency in expert opinion were retained for further testing under practical conditions.

2.1.3 Pedagogical Testing Method

Pedagogical testing was used to determine the reliability of the criteria after the expert selection process. Tests were conducted on 13-14 year old male athletes of the Dong Thap province 100m freestyle swimming team according to a standardized testing procedure and conditions. Each test was performed twice using the test-retest method. The timing, location, equipment, testing sequence, and requirements were controlled to minimize the impact of external factors on the results. Athletes were fully informed of the content and performed warm-up exercises before the test. The results of the two tests were used to determine the stability of each test, thereby evaluating the applicability of the criteria in testing the physical fitness of young swimmers.

2.1.4 Pedagogical Testing Methods

2.1.4.1 Statistical Methods

The collected data were processed using statistical methods commonly used in physical education research. The study used percentages (%) to summarize interview results; mean and standard deviation (SD) to characterize the distribution of test results.

The reliability of the tests was determined through the Pearson correlation coefficient (r) between two tests. Criteria with high correlation coefficients and statistical significance were considered to ensure stability for use in assessing physical fitness for the study subjects. Data were processed using SPSS 22.0 software; the statistical significance threshold was determined at $p < 0.05$.

2.5 Participants

Research subjects: 10 male athletes aged 13-14 from the Dong Thap province 100m freestyle swimming team.

Interview subjects: 30 experts, including 6 coaches, 15 lecturers, and 9 teachers with experience in training and competing in swimming.

3. Results

To determine the appropriate tests for assessing the physical fitness of 13-14 year old male athletes in the 100m freestyle swimming team of Dong Thap province, this thesis was conducted in three steps:

- **Step 1:** Synthesize physical fitness assessment tests in swimming from various sources, research papers, and authors both domestically and internationally.
- **Step 2:** Interview experts, coaches, and specialists.
- **Step 3:** Check the reliability and persuasiveness of the tests.

3.1. Compilation of physical fitness tests for 13-14 year old male athletes of the Dong Thap province 100m freestyle swimming team

Synthesis of research works from published documents, books, and scientific research works related to physical fitness assessment tests for male swimmers such as: Le Van Chi (2016) [13], Lam Hoang Dung (2015) [14], Huynh Thanh Ha (2022) [11], Vu Thi Thu Ha, Dinh Hong Anh (2024) [25], Phan Thanh Hai (2012) [16], Pham Thi Ngoc Han (2024) [17], Nguyen Thi Ngoc Han (2025) [18], Nguyen Nhat Huy Hoang (2015) [19], Nguyen Thi My Linh (2006) [20], Le Nguyet Nga (2000) [21], Thai Thanh Nhan (2025) [22], Vo Tan Phat (2023) [12], Chung Tan Phong (1998) [23], Ngu Chi Thanh (2014) [24], Vu Chung Thuy (2000) [25], Do Trong Thinh (2008) [9], Nguyen Viet Trung (2018) [26], Vu Cong Truong (2015) [27], Do Tang Truong (2017) [28]. Based on the purpose, objectives, training stage, characteristics of the research subjects and practical conditions in Dong Thap through their training process, the study selected 24 tests, including 13 tests to assess general physical fitness and 11 tests to assess specialized physical fitness for male athletes aged 13-14 in the Dong Thap province 100m freestyle swimming team.

3.2. Interview with experts conducting fitness assessment tests for 13-14 year old male athletes of the Dong Thap province 100m freestyle swimming team

After compiling 24 physical fitness assessment tests, the study proceeded to create expert interview questionnaires to solicit opinions from experts, including coaches, lecturers, and physical education teachers in Dong Thap province, in order to select tests suitable for the research subjects. The interview subjects included 30 experts: 6 coaches, 15 lecturers, and 9 teachers, all of whom have experience in coaching, training, and competing in swimming.

The interview questionnaire was designed with three levels: frequently used, rarely used, and not used. Experts, including coaches, lecturers, and teachers, were interviewed twice, one week apart. The study stipulated that tests with a selection rate of 85% or higher in both interviews were chosen to assess the physical fitness level of 13-14-year-old male athletes in the 100m freestyle swimming team of Dong Thap province.

After two rounds of distributing and collecting interview questionnaires, the study selected tests to assess the physical fitness of 13-14 year old male athletes in the 100m freestyle swimming team of Dong Thap Province. The difference between the two

interview results was tested using the chi-square index, yielding the results presented in Table 1 as follows:

Table 1: Results of interviews for selecting and testing physical fitness for 13-14-year-old male athletes of the Dong Thap Province 100m freestyle swimming team

Test	First time		Second time		Comparison results	
	Total score	%	Total score	%	χ^2	Sig
General fitness						
30m sprint with high start (s)	48	80%	38	63%	0.1	0.752
High-speed 30m interval run	22	37%	35	58%	0.0	1.000
1500m run (minutes)	52	87%	54	90%	0.8	0.371
100m sprint with low start (s)	54	90%	54	90%	1.0	0.317
Pop-ups (times/minute)	47	78%	36	60%	0.1	0.752
Standing high jump (cm)	53	88%	52	87%	0.9	0.343
Prone push-ups (res/minute)	51	85%	51	85%	1.0	0.317
Sit-ups (repeat/minute)	55	92%	53	88%	0.8	0.371
12-minute run (m)	43	72%	38	63%	0.4	0.527
Flexibility of the body (cm)	45	75%	43	72%	0.8	0.371
Vertical split (cm)	42	70%	39	65%	0.6	0.439
Side split (cm)	44	73%	45	75%	0.9	0.343
1-minute Jump rope (times)	45	75%	40	67%	0.4	0.527
Specialized physical fitness						
50m butterfly strokes (seconds)	54	90%	55	92%	0.9	0.343
50m breaststroke (seconds)	53	88%	53	88%	1.0	0.317
50m backstroke (seconds)	51	85%	52	87%	0.9	0.343
50m freestyle swimming (seconds)	54	90%	53	88%	0.9	0.343
100m butterfly strokes (seconds)	46	77%	50	83%	0.6	0.439
100m breaststroke (seconds)	40	67%	25	42%	0.0	1.000
100m backstroke (seconds)	30	50%	31	52%	0.9	0.343
100m freestyle swimming (seconds)	53	88%	55	92%	0.8	0.371
200m individual medley (seconds)	49	82%	50	83%	0.9	0.343
800m freestyle swimming (seconds)	34	57%	36	60%	0.7	0.403
1500m freestyle swimming (seconds)	43	72%	44	73%	0.9	0.343

The data in Table 1 of the study selected 10 tests with a selection rate of 85% or higher, including 5 general fitness tests and 5 specialized fitness tests as follows:

- **General fitness:** 1500m run (minutes), 100m sprint with low start (s), standing high jump (cm), push-ups (res/minute), and sit-ups (res/minute).
- **Specialized fitness:** 50m butterfly strokes (seconds), 50m breaststroke (seconds), 50m backstroke (seconds), 50m freestyle swimming (seconds), and 100m freestyle swimming (seconds)

Next, the study conducted reliability testing of the selected tests.

3.3. Reliability Testing of the Tests

To determine the reliability of 10 fitness assessment tests for 13-14-year-old male athletes of the Dong Thap Province 100m freestyle swimming team, this thesis conducted tests on the research subjects, administering two tests within three days under identical conditions. The reliability test results are presented in Table 2.

Table 2: Results of reliability tests of physical fitness tests for 13-14 year old male athletes of the Dong Thap province 100m freestyle swimming team

Test	$\bar{X} \pm S$		Reliability coefficient	
	First time	Second time	r	P
General fitness				
1500m run (s)	5.36 ± 0.12	5.35 ± 0.13	0.62	>0.05
100m low start running (s)	14.86 ± 0.71	14.79 ± 0.46	0.83	<0.05
Standing high jump (cm)	41.0 ± 1.5	41.3 ± 1.3	0.97	<0.05
Prone push-ups (res/minute)	43.9 ± 1.2	43.6 ± 2.0	0.86	<0.05
Sit-ups (repeat/minute)	44.5 ± 1.8	44.9 ± 1.9	0.85	<0.05
Specialized physical fitness				
50m butterfly strokes (seconds)	34.20 ± 2.08	34.11 ± 1.91	0.85	<0.05
50m breaststroke (seconds)	41.0 ± 2.07	40.97 ± 2.17	0.88	<0.05
50m backstroke (seconds)	34.76 ± 1.94	34.28 ± 2.43	0.89	<0.05
50m freestyle swimming (seconds)	29.32 ± 1.13	29.26 ± 1.00	0.88	<0.05
100m freestyle swimming (seconds)	65.44 ± 2.51	64.84 ± 2.61	0.83	<0.05

After conducting reliability tests using Table 2, the following results were obtained: One test was disqualified due to $r < 0.8$ and $P > 0.05$ during retesting. A total of nine fitness tests were deemed reliable, including four general fitness tests and five specialized fitness tests:

- **General fitness:** 100m low start running (s), Standing high jump (cm), Push-ups (res/minute), Sit-ups (res/minute)
- **Specialized fitness:** 50m butterfly strokes (seconds), 50m breaststroke (seconds), 50m backstroke (seconds), 50m freestyle swimming (seconds), and 100m freestyle swimming (seconds)

3.4. Testing the informativeness

To test the informativeness of physical fitness assessment tests for 13-14 year old male athletes of the Dong Thap Province 100m freestyle swimming team, the study determined the informativeness coefficient by determining the correlation between the results of the physical fitness assessment tests and the 100m freestyle swimming performance of the research subjects. Using Spearman's correlation coefficient formula [29], the analysis results are presented in Table 3.

Table 3: Correlation coefficients between performance in physical fitness tests and 100m freestyle swimming performance of 13-14 year old male athletes of the Dong Thap Province 100m freestyle swimming team

	Test	r	P
General fitness			
1	100m low start running (s)	0.54	<0.05
2	Standing high jump (cm),	0.62	<0.05
3	Prone push-ups (res/minute)	0.57	<0.05
4	Sit-ups (res/minute)	0.49	<0.05
Specialized fitness			
5	50m butterfly strokes (seconds)	0.78	<0.05
6	50m breaststroke (seconds)	0.72	<0.05
7	50m backstroke (seconds)	0.79	<0.05
8	50m freestyle swimming (seconds)	0.91	<0.05
9	100m freestyle swimming (seconds)	1.00	<0.05

The results in Table 3.4 show that in the 9 fitness tests assessing the informativeness of 13-14-year-old male athletes of the Dong Thap Province 100m freestyle swimming team, all were correlated with competition performance ($r > 0.4$ and $P < 0.05$). These tests ensure informativeness for evaluating the fitness of 13-14 year old male athletes of the Dong Thap Province 100m freestyle swimming team.

Through steps of document compilation, interviews, reliability testing, and research informatics, nine fitness tests were identified for male athletes aged 13-14 in the 100m freestyle swimming team of Dong Thap Province, including:

- **General fitness:** 100m sprint (s), Standing high jump (cm), Push-ups (res/minute), Sit-ups (res/minute)
- **Specialized fitness:** 50m butterfly (s), 50m breaststroke (s), 50m backstroke (s), 50m crawl (s), 100m freestyle (s)

4. Discussion

Determining a fitness assessment test system is important in the research and training of young swimmers because test results are the basis for identifying fitness levels, monitoring development, and evaluating the effectiveness of the training process. In this study, the test selection process is conducted in three steps, including synthesizing documents and related research works; expert interviews; checking reliability; and reporting. This process ensures that the selected tests have both a scientific basis and are suitable for the characteristics of 13–14-year-old male athletes and the professional requirements of the 100m freestyle distance.

Based on a synthesis of domestic literature and research, the project identified 24 initial tests, including 13 general physical fitness tests and 11 specialized physical fitness tests. The test system is inherited from the research directions of Le Van Chi (2016) [13], Lam Hoang Dung (2015) [14], Huynh Thanh Ha (2022) [11], Vu Thi Thu Ha, Dinh Hong Anh (2024) [25], Phan Thanh Hai (2012) [16], Pham Thi Ngoc Han (2024) [17], Nguyen

Thi Ngoc Han (2025) [18], Nguyen Nhat Huy Hoang (2015) [19], Nguyen Thi My Linh (2006) [20], Le Nguyet Nga (2000) [21], Thai Thanh Nhan (2025) [22], Vo Tan Phat (2023) [12], Chung Tan Phong (1998) [23], Ngu Chi Thanh (2014) [24], Vu Chung Thuy (2000) [25], Do Trong Thinh (2008) [9], Nguyen Viet Trung (2018) [26], Vu Cong Truong (2015) [27], and Do Tang Truong (2017) [28]. This shows that domestic studies have used a fairly diverse testing system, from evaluating speed, strength, and endurance on land to speed and professional ability in different swimming styles and distances.

The works of Chung Tan Phong (1998) [23], Le Nguyet Nga (2000) [21] and Vu Chung Thuy (2000) [25] approach the assessment of training level and physical activity ability of young swimmers. Nguyen Thi My Linh (2006) [20], Vu Cong Truong (2015) [27], Le Van Chi (2016) [13] and Nguyen Viet Trung (2018) [26] focus on general physical fitness and specialized physical fitness; while Do Trong Thinh (2008) [9], Nguyen Nhat Huy Hoang (2015) [19] and Vo Tan Phat (2023) [12] delve into aerobic capacity, endurance and speed endurance. Phan Thanh Hai (2012) [16] and Huynh Thanh Ha (2022) [11] have research directions close to the topic when focusing on 100m performance and developing specialized physical fitness for freestyle swimmers. Inheriting many research directions has created a basis for the topic to build a relatively comprehensive initial test system.

Notably, this study did not use the test set from a previous work as is, but instead screened it based on research objectives, age characteristics, 100m freestyle distance requirements, and actual training conditions in Dong Thap. Therefore, the initial 24 tests both demonstrated continuity and provided a scientific basis for selecting tests suitable for the specific research subjects.

The results of two interviews with 30 experts, including 6 coaches, 15 instructors, and 9 experienced swimming teachers, led to the selection of 10 tests with a consensus rate of 85% or higher. The interviewees were relatively diverse, with the majority having many years of work experience, contributing to the practical value of the selection results. The χ^2 test results between the two interviews both showed a Sig. > 0.05, indicating that the experts' opinions were relatively stable, with no statistically significant difference between the two interviews.

Through reliability testing using the retest method, the 1500m run test had a correlation coefficient $r = 0.62$ and $P > 0.05$, so it was excluded. The remaining nine tests met the requirements, including four general fitness tests: 100m low-start run, standing high jump, 1-minute push-ups, and 1-minute sit-ups; and five specialized fitness tests: 50m butterfly strokes (seconds), 50m breaststroke (seconds), 50m backstroke (seconds), 50m freestyle swimming (seconds), and 100m freestyle swimming (seconds). This result shows that expert consensus is only an initial screening step; direct testing on research subjects is necessary to ensure objectivity and measurable validity of the tests.

Structurally, the four general fitness tests comprehensively reflect the abilities related to 100m freestyle swimming performance. The 100m low-start sprint reflects speed and the ability to maintain speed; the standing jump assesses lower limb strength and speed, which is important for the start and kicking; the prone push-up reflects upper

limb strength and endurance, related to the ability to maintain arm power; and the sit-up reflects core strength and endurance, contributing to body posture stability and coordinated power transfer between the upper and lower limbs. The addition of the sit-up test makes the general fitness assessment system more comprehensive in its understanding of the role of body strength for swimmers.

For the five specialized physical fitness tests, the 50m butterfly stroke, 50m breaststroke, and 50m backstroke reflect motor skills, coordination, and physical performance under different swimming technical conditions; the 50m freestyle directly assesses technical speed, while the 100m freestyle reflects the overall ability to develop and maintain speed over the competition distance of the research subjects. The addition of the 50m breaststroke test broadens the scope of the specialized testing system, contributing to a more comprehensive assessment of the physical fitness and overall water-based motor skills of young athletes.

The results of the informatics test showed that all nine tests correlated with 100m freestyle performance, with coefficients r ranging from 0.49 to 1.00 and $P < 0.05$. In the general fitness group, standing high jump had the highest correlation coefficient ($r = 0.62$), followed by push-ups ($r = 0.57$), a 100 m low start sprint ($r = 0.54$), and sit-ups ($r = 0.49$). The results indicate that 100m freestyle performance is related to lower limb speed, upper limb strength and endurance, speed, and trunk strength. This is consistent with the characteristics of short-distance swimming, where athletic performance is the result of the coordinated effort of multiple fitness components rather than a single attribute.

In the specialized fitness group, the tests showed correlation coefficients ranging from $r = 0.72$ to $r = 1.00$. Notably, the 50m freestyle stroke correlated very strongly with the 100m freestyle stroke ($r = 0.91$), indicating that the specialized speed in the 50m distance is a clearly related factor to the 100m freestyle performance. The 50m backstroke ($r = 0.79$), 50m butterfly ($r = 0.78$), and 50m breaststroke ($r = 0.72$) tests also showed high correlations, reflecting the relationship between specialized fitness foundation, water coordination ability, and athlete performance. These results suggest that using multiple swimming styles in the assessment system is appropriate for the comprehensive training of 13-14 year old athletes.

Compared to previous studies, the results identified a system of 9 tests, including 4 general fitness tests and 5 specialized fitness tests, for male 13-14 year old athletes of the Dong Thap province's 100m freestyle swimming team. The test system not only inherits research on assessing the fitness of young swimmers but is also refined through expert opinions, reliability testing, and informational validity on the research subjects themselves. In particular, the inclusion of the abdominal crunch and 50m breaststroke tests provides a more comprehensive assessment of core strength and specialized fitness levels within the country.

Thus, the research results identified nine tests with practical value in assessing the physical fitness of 13-14 year old male athletes in the 100m freestyle swimming team of Dong Thap province. The results also showed that the physical fitness level of the studied group of athletes was relatively uniform, and the data were representative. These results

provide a scientific and practical basis for selecting exercises, organizing experiments, and evaluating the effectiveness of physical fitness development in subsequent research areas.

5. Conclusions

Through document synthesis, expert interviews, reliability and relevance testing, the study identified nine physical fitness assessment tests for 13-14 year old male athletes of the Dong Thap province 100m freestyle swimming team. These include four general fitness tests: 100m sprint, standing high jump, 1-minute push-ups, and 1-minute sit-ups; and five specialized fitness tests: 50m butterfly strokes (seconds), 50m breaststroke (seconds), 50m backstroke (seconds), 50m freestyle swimming (seconds), and 100m freestyle swimming (seconds)

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Conflict of Interest Statement

The authors declare no conflicts of interest.

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