



SOCCER

MONITORING *SYSTEM*

Who are we?

We are **pro-FITNESS-WELLNESS-team!!**

SOCCKER MONITORING SYSTEM (SMS) is our sports consulting system that advises and helps soccer clubs, academies, national federations and sports and commercial organizations in the areas of selection, development and healthcare of soccerers. As a result of scientific and practical experience in training and developing players of all age groups, over the years **(SMS)** has developed a unique expert system for diagnosing and monitoring.

OUR Mission

We are able to provide outstanding service to our clients and jointly explore possibilities for the creation of positive soccer trends with the simultaneous development of greater sporting value. (SMS) accordingly, will assist its clients in drafting training plans in order to ensure adequate progress, monitoring and healthcare. Continued testing of the soccerers provides quality information about individuals and teams, and, at the same time, ensures a frequent update of the expert system. Consequently, with each new test our system is enhanced and as a result our clients receive finer feed-back.

So far, the **(SMS)** expert system has proven to be infallible in discovering talented players at an early age (specifically, six to twelve years old). We have established criteria based on over 20 years of experience, scientific research and state-of-the-art instruments, and tests based on internationally scientifically recognized metric characteristics, which are the basic values of our system.

Our Team

Our team consists of experts in the fields of sports, physical education and fitness and wellness. We are a trained team with particularly rich experience in measuring and testing soccer players. We are **pro-FITNESS-WELLNESS-team!!**



Our Philosophy

We view **"selection as a process"** and not as a "single action" (single measurement). Assessment of dynamics in advancement is our criterion for future success. Soccer is not a science, but it still benefits from it every day.

Principles of SMS

EXPERT SYSTEM



(SMS) expert system is based on knowledge and information that currently includes testing and monitoring over 9 000 soccer players. **(SMS)** expert system warns about motor skills, morphological and psychological characteristics that individuals must possess in order to become top soccer players. Morphological and motoric profiles are the basic components that a soccer "prodigy" needs and are a necessary basis for building top soccer players. However, such capabilities alone are not enough. In order to form a top soccer player, what is needed, apart from them, are sports and social intelligence, positive effects of upbringing, social environment, etc.

According to FIFA standards, the period of development of young soccer players is divided into the phase of education (6-11 years), pre-training (12-15 years), training (16- 19 years) and post-training (19-21 years).

In these stages, young players go through different sensitive periods in the development of motor skills. For this reason, this system applies different tests of the same motor skills, since they correspond to the characteristics of motor skills for a certain age. From a series of factors that represent the anthropological status of soccer players, our system uses those that will most realistically favor the specific morpho-motoric-psychological space required for the realization of effective technique and game performance.

(SMS) expert system minimizes the possibility of selection errors and acts against any careless removal of talented players in the selection process.

Talent - related information

- Determining the gifted child and talent indicators
- For a talented player, the system provides information on possible improvements to his performance
- For a less talented player, information is provided explaining the reasons for that finding



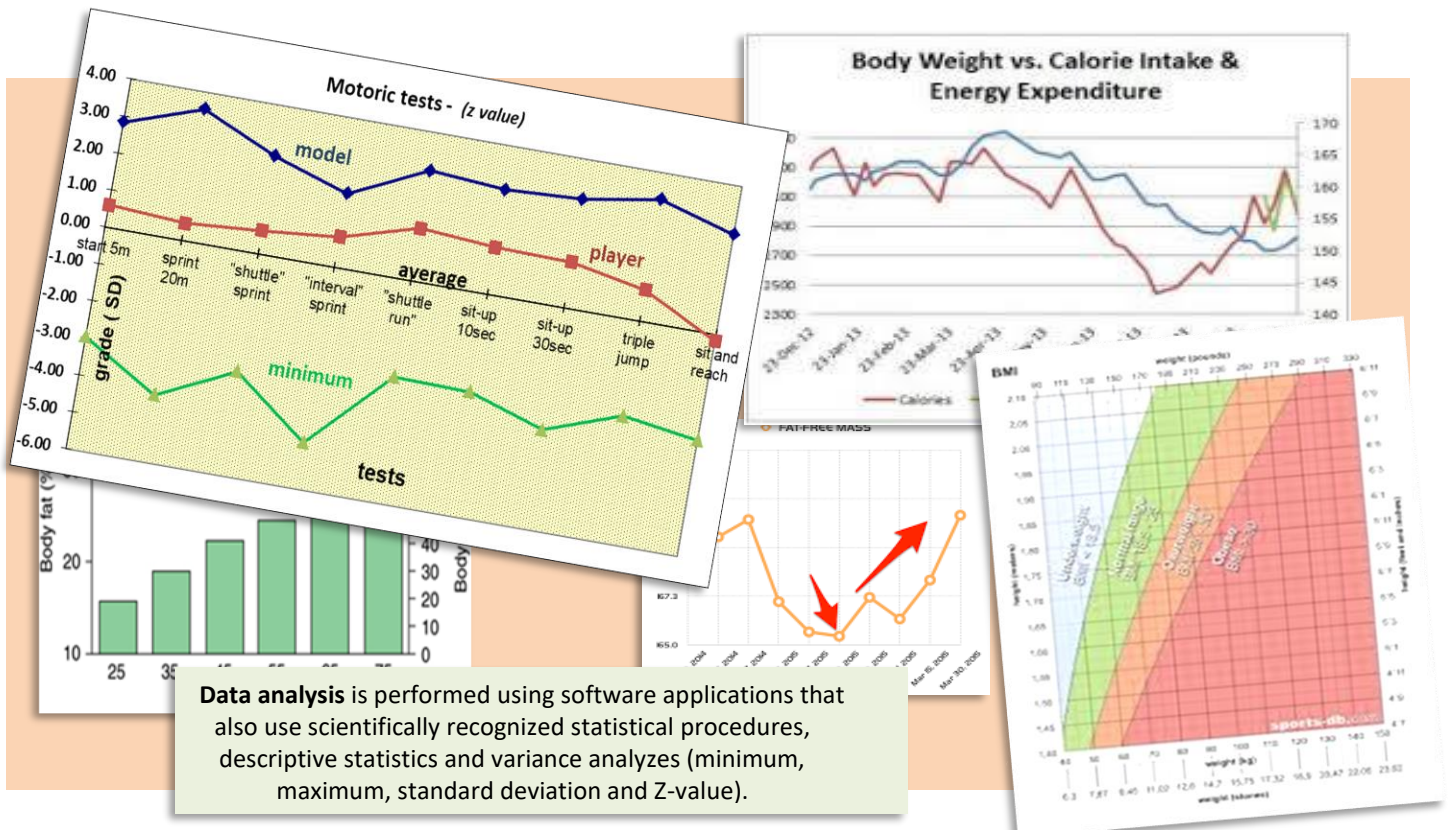
All tests are carried out by state-of-the-art equipment in accordance with the highest international scientific standards.



How the system works?

Compared to laboratory tests (which measure latent abilities), this system is focused on field tests (which measure manifest abilities). They are implemented in specific soccer conditions that are specially adapted to match the standards of soccer player development recommended by FIFA.

The system consists of five batteries of tests: general motor, specific motor, general-morphological, specific morpho-functional, psychological, which are analyzed by several software application programs.



The modern telemetry time-measuring system (*the Browning Timing System*), the laser measuring system for measuring the length of the jumps, used to evaluate the morphological characteristics of the body-impedance system (*Omron BF*), laser body height measurement system, foot-scan analyzer, special reaction agility measurement system (*SAMS*) etc.

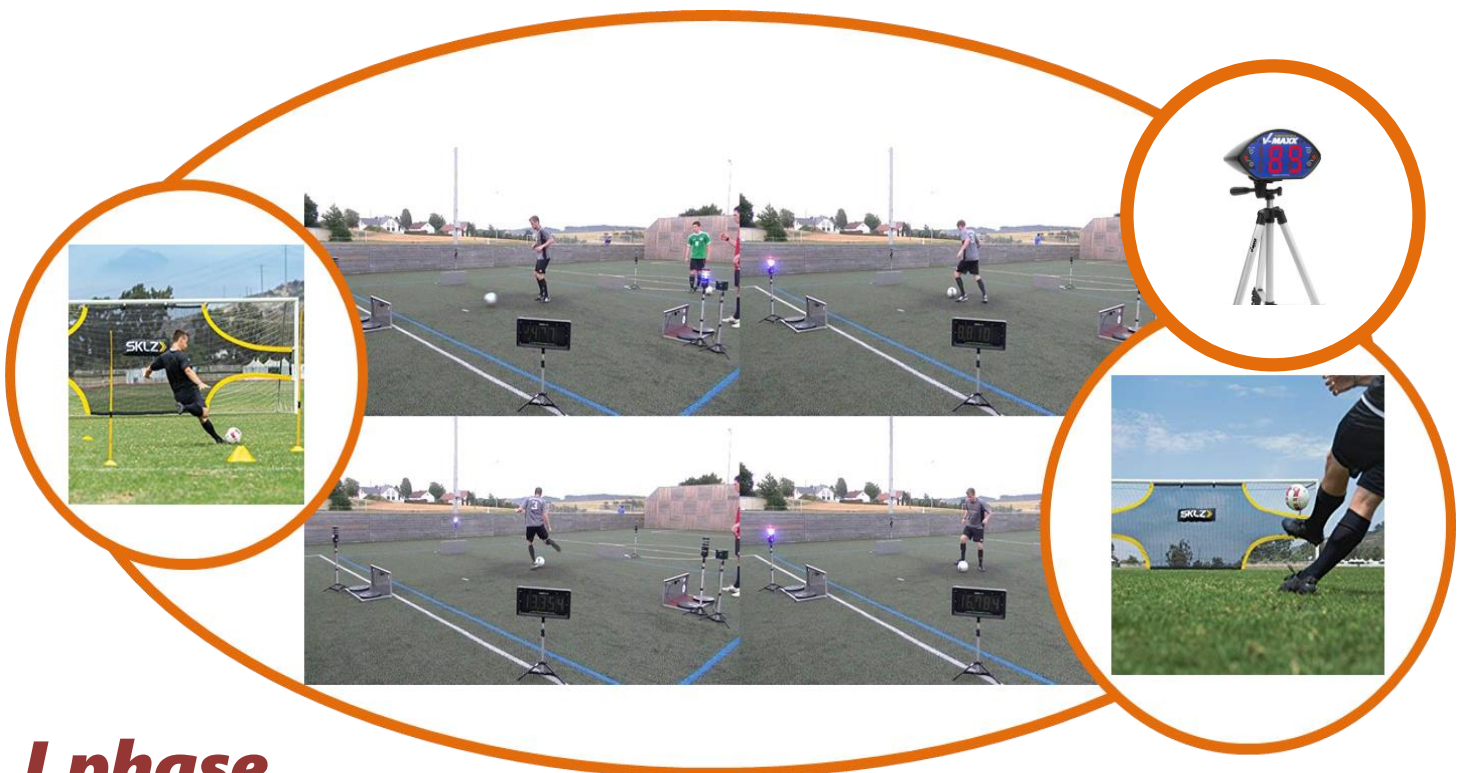
SUUNTO system for active telemetry monitoring of physiological parameters as well as application software (*Firstbeat SPORTS software*) is used for testing the seniors for analysis of the achieved results.

The processing of the results is carried out in relation to three value criteria - average, percentile rank and model (based on the results of over 9 000 tested players). The number of tested players and new results continues to grow - along with the tests that are continuously conducted, and each new test makes the base better.

The model is feedback from the coach (practice), or guideline that allows to determine the level of the monitored motor properties located in the model, ie, determine the current state of soccer skills in relation to the model. Criterion model shows the differences that exist between the model and the actual soccer, where size is determined by the process of change and development in several measurements. This is precisely programmed training, monitor the dynamics of the implementation of training, more efficiently manage the development of certain features and capabilities included in the model. In this system of monitoring the motor model that consists of the results of a large number so far tested players (over 9 000) from the country and abroad as well as all our national teams. Thus, the model simulates the ideal specific motor segment anthropological area players current age categories. It is a dynamic system whose basis is a software organized databases, with each new measurement is enriched with new information, and thus affects the quality of the model.

What ability, skills and characteristic are tested?

Player testing takes place *in three phases*. In the first phase, *basic morphological and specific morpho-functional characteristics* are tested. In the second phase, *specific motor abilities (efficiency-achievement) and motor skills (effectiveness)* are tested. In the third phase, *psychological testing* is done! The age of the soccer player and the sensitive period to which that age belongs determine the structure of adequate batteries, that is, which of the offered variables will be tested.



I phase

Basic Morphological Characteristics (BMC)

- body height
- body mass
- BMI – body mass index
- percentage of body fat
- body muscle percentage
- MFR – muscle to fat ratio
- caloric intake (kcal)
- analysis of daily energy requirement (DEP)
- metabolism of daily activities (MDA)
- food processing energy (DTI)

Specific Morpho-Functional Characteristics (SMFC)

- assessment of peak height growth rate, biological maturity (APHV) and final height, (*Maturity offset protocol - Mirwald*)
- determination of constitutional type (*Heath-Carter Anthropometric somatotype method*)
- assessment of mobility, motor control and body stability (*FMS - Functional movement screen protocol*)
- musculoskeletal screening of morphological-functional-dynamic asymmetries and imbalances (*MST-Sport-specific musculoskeletal screening techniques*)
- assessment of posture and balance - posture, gait, balance map, COP, balance (*Foot-scan analysis method*)

II phase

Basic Motor Skills (BMS)

(achievement)

- start
- possibility of acceleration
- ability to change direction (COD)
- endurance in speed (RSA)
- aerobic endurance (VO2max)
- anaerobic endurance (lactate tolerance)
- speed strength of the torso
- endurance in speed strength of the torso
- explosive leg strength
- flexibility

Specific Motor Skills - tests with the ball (SMS)

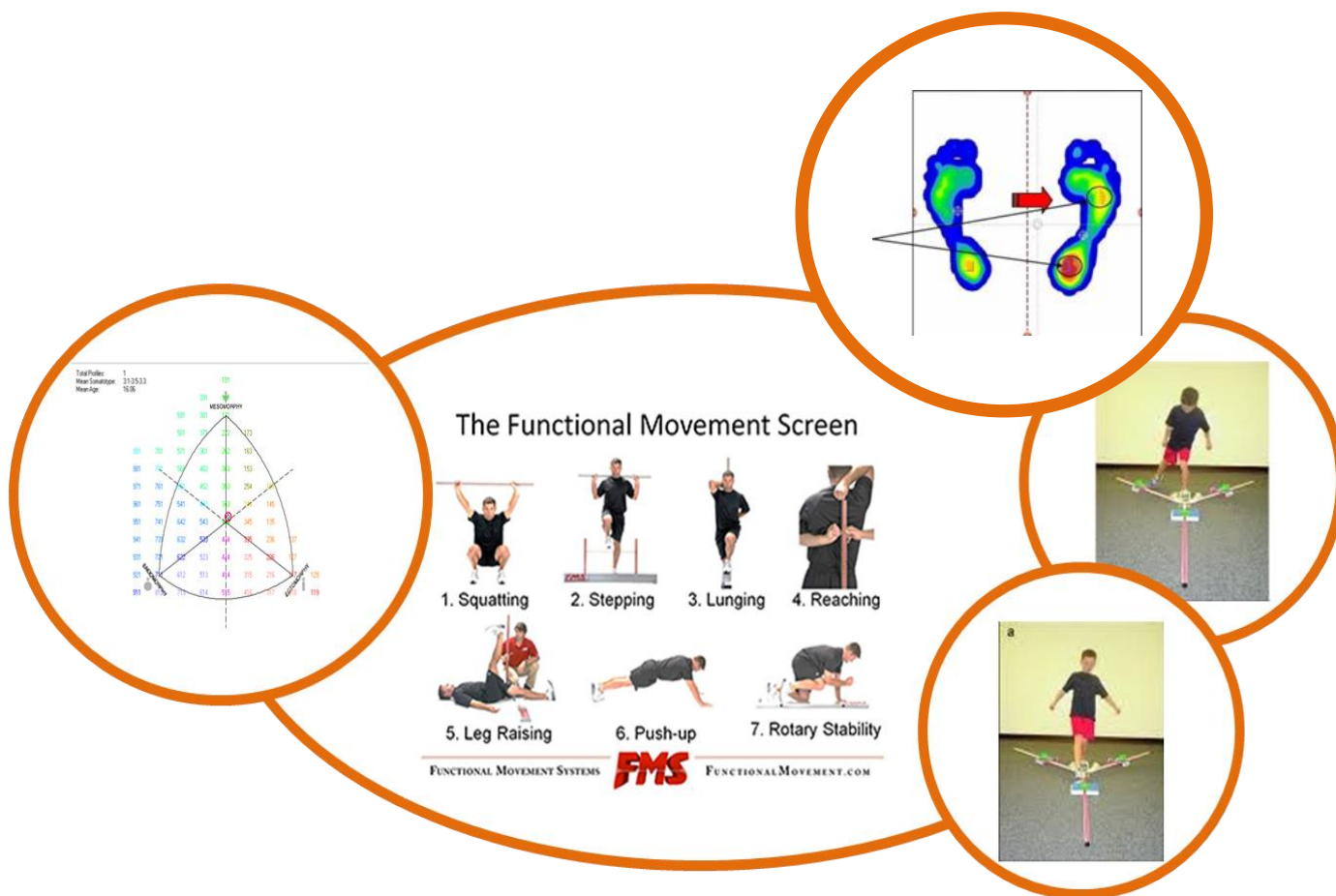
(effectiveness)

- Start (SAT)
- Acceleration - agility test (AAT)
- Dribbling and passing - agility test (DPAT)
- Passing and reaction - agility test (PRAT)
- Shooting - agility test (SAT)
- Passing, receiving and processing - agility test (PRPAT)
- Anaerobic lactic - agility test (ALAT)

III phase

Specific Psychological Characteristics (SPC)

- **optimism – pessimism - test (R-LOT)**
- **hope - test (CHS)**
 - about the way to the goal - travel opinion
 - motivation towards the goal - agentic thinking
- **perfectionism - test (SMPS 2)**
 - personal expectations
 - worry about mistakes
 - parental pressure
 - coach pressure
 - about coaching dilemmas
 - behavior before the competition
- **anxiety - test (SAS-2, CSAI-2)**
 - cognitive concern
 - concentration disorder
 - somatic anxiety
 - about self-confidence
- **parenting style - test (NLRA)**
 - authoritative
 - authoritarian
 - yielding one
 - not included



Reports

The resulting reports provide the following information:

- Overview of individual and group results obtained with the help of graphs, tables...
- Discussion of results and proposal of measures for their further improvement
- Ability to compare results with averages, models and percentile rang, the structure of which consists of the best achieved results of players for their age, including all players tested from 2000 until today

Group reports

(motoric)

- (Doc. 1-9) For each motoric test for the whole team
- (Doc. 10) Ranking of all players per team for repeating sprint (RSA)
- (Doc. 11) Average test scores for the whole team
- (Doc. 12) Ranking of all players in all tests for the whole team
- (Doc. 13) Ranking of all players per team of speed, strength and endurance
- (Doc. 14) Ranking of all players per team for Basic Motor Ability (BMA)
- (Doc. 15) Ranking of all players in specific motor tests (SMS) (the whole tests)
- (Doc. 16) Ratio of average group results, category and model
- (Doc. 17) Top ranked players by category
- (Doc. 18) Reports about the efficiency of coach work

(morphological)

- (Doc. 19) Ranking list of morphological tests - body height (Tv) and body weight (Tm)
- (Doc. 20) Ranking list of morphological tests - body fat (%) and body muscle (%)
- (Doc. 20) Ranking list of morphological tests - body mass index (BMI) and muscle to fat relatio (MFR)

Individual reports

(motoric)

- (Doc. 21) Individual basic motoric ability (BMA) with repeated measurement (1, 2, 3)
- (Doc. 22) Individual specific motoric skills (SMS) with repeated measurement (1, 2, 3)

(morpho - functional)

- (Doc. 23) Individual basic morphological characteristics (BMC)
- (Doc. 24) Prediction of Age of Peak Height Velocity (APHV)
- (Doc. 25) Determining the constitution type
- (Doc. 26) Assessment balance - postural, gait, balance map, COP, equilibrium
- (Doc. 27) Assessment of stability, mobility and body asymmetry (FMS)
- (Doc. 28) Assessment a person's risk for injury and functional symmetry

Nikola Lukovic

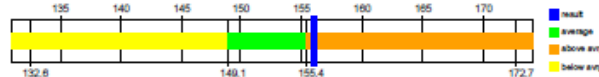
Ratio of morphological characteristic of the current player according to standards

For successful motor expression neuromuscular qualities are necessary, as well as certain morphological characteristics, in fact high-quality locomotor system. It's very important to establish the minimum of player's characteristics and compare them with appropriate standards. In that case they will positively influence on successful realization of football's motor demands.

Body Height 156cm

Given result shows the body height of the football player

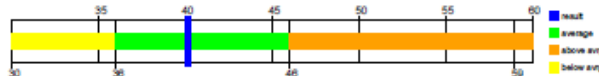
Analysis of Body Height (cm)



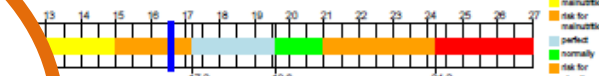
Body Weight 40.3kg

Given result shows the body weight of the football player

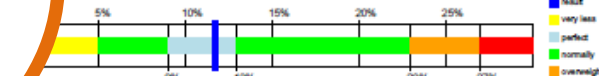
Analysis of Body Weight (kg)



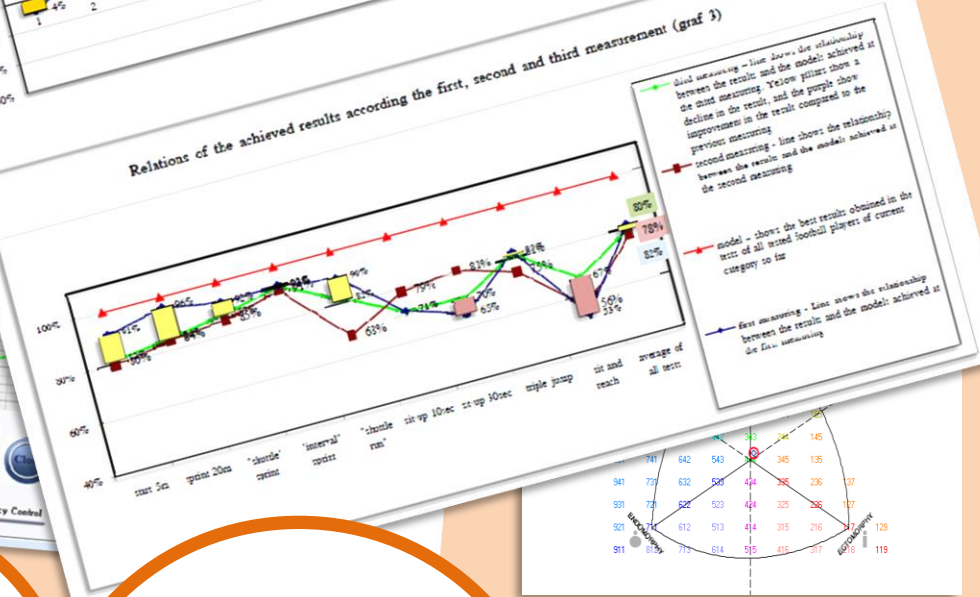
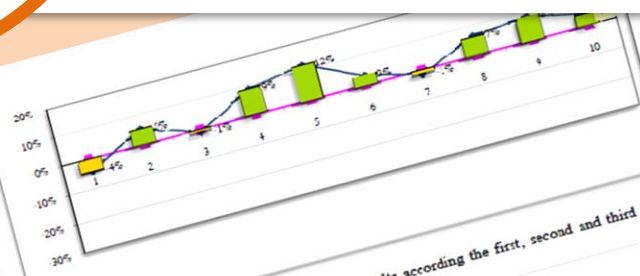
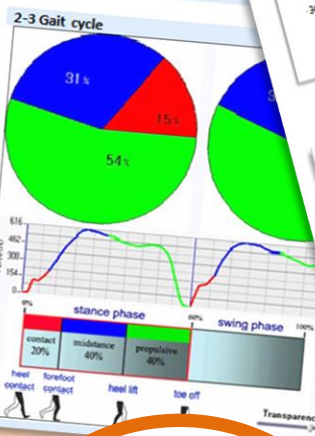
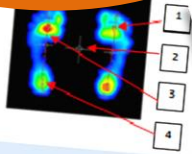
Analysis of Body Mass Index (BMI)



Analysis of Body Fat (%)



Analysis of Body Muscles (%)



Advantage

Organized in this way, the system ensures adequate and systematic archiving of the obtained results (information). After the testing of motor skills, software-processed results are obtained in written and graphic reports (*PDF*). Group reports refer to the comparison of players in the group itself, i. e. age category being tested, and in individual reports the player is compared with all players of the same age tested so far, which are in the our software database.

- Discussion of the results and suggested measures for further improvement
- Proposals for further work and expert comments
- The ability to compare results with models, whose structure consists of the best results achieved by players for their age, including all players tested from 2000 to today

Benefits

The system can provide long-term, middle-term and short-term information and is always readily available for selectors and coaches in the form of electronic files saved on the web platform.

- The test reports are clear, precise and understandable to any coach.
- The sample has all competitive levels from beginners to seniors.
- The system provides individual and group reports.
- Any information can be isolated in order to create the national model, but at the same time to make comparisons with other national models or even team lines.
- The **(SMS)** enables each entity to establish the criteria in a particular motor and functional space that allows monitoring of progress.
- The validity of results obtained by means of the **(SMS)** expert system is scientifically assessed and verified at international congresses and in international scientific publications.

Applications

- **Monitoring** the development of all categories of players through regular testing at six-month intervals, "hunting for talent", checking the talent of players, support in programming the training process a
- **Scouting**, through modern, high-quality scientific and practical testing of a large number of players (based on unbiased information, not just on subjective perception)
- **Formation of software bases, models, criteria and standards** of children's abilities for all age categories at all levels, which become criteria for all other children
- In **national selections**, through monitoring all categories of national selections and supporting scouting, in order to fully see the potential at all levels and in all regions
- In **soccer camps** - player testing
- In **soccer schools** - player testing
- In **soccer academies** - player testing
- In **scientific and professional institutes** - testing players, providing valid and scientifically verified data for scientific works
- In **the Olympic Committees** - player testing, support for **the development of national criteria, tendencies and strategies** in the development of national sports



Its application helps the coach to:

- Systematically monitor the motor and morphological development of soccer players
- Create age appropriate training respecting sensitive periods of the development of related skills
- Determine motor abilities and morphological characteristics of the football players
- Control and correct the training plans
- Achieve a better effect of the training process
- Programs and creates appropriate trainings
- Examine the effect of the training program
- Make short and long term planning of training programs
- Provide objective feedback to players on their abilities for training and competition
- Raise motivation

Feedback

Our experience shows that 50% of the best rated players at the elite youth championships in Serbia were identified by the system (**SMS**) when they were 6-12 years old.

The authenticity and accuracy of this system is supported by results confirmed in science and practice. Those players who were identified and selected in childhood are now achieving significant results, both in local clubs and national teams, as well as in the most prestigious European clubs.

These are just some of them!



F. Djordjevic
(Nantes FC)



F. Markovic
(Benfica FC)



D. Pantic
(FC Partizan)



F. Stojkovic
(Rapid Vienna)



N. Maksimovic
(SSC Napoli)



M. Nastasic
(Manchester City)



F. Djuricic
(Benfica FC)



A. Ignjovski
(Werder FC)



V. Savic
(G. Bordeaux)



F. Kostic
(Hamburger SV)



L. Markovic
(Liverpool)



S. Mijailovic
(Kajserispor)



M. Pavlovski
(Porto Benfica)



L. Milunovic
(Aris)



L. Đorđević
(Sampdoria)

.....and many others!

Our Clients

These are just some of them!



Soccer Association
(Serbia)



D.F.A. Serbia
(Serbia)



F.C. Partizan
(Serbia)



F.C. Red Star
(Serbia)



F.C. Ofk Beograd
(Serbia)



M.M. Ada
(Serbia)



F.C. Amkar
(Russia)



F.C. Rad
(Serbia)



F.C. Cukaricki
(Serbia)



F.C. Mogren
(Montenegro)



F.C. Borac
(Bosnia)



Jagodina
(Serbia)



F.C. Vllaznia
(Albania)



F.C. Ermis
(Cyprus)



F.C. Pakhtakor
(Uzbekistan)



F.C. Radnicki
(Serbia)



F.C. As
(Serbia)



F.C. Mladost
(Serbia)



UDFT SRBIJE
(Serbia)



F.C. Vojvodina
(Serbia)



F.C. Gaucos
(Serbia)



M.M. Europa
(Innsbruck) (Austria)



F.C. Zemun
(Serbia)



F.C. Pilares
(Serbia)

....and many others!

Our Team



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