The physical and game skills profile of the elite
South African schoolboy rugby player

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Abstract
Rugby is a popular sport played in more than a 100 countries worldwide. In South Africa rugby is a major sport, compared to other playing countries such as Australia, England, France, Ireland and Scotland, where it is only the third, fourth or fifth most popular sport (SARFU: 2003d:11) Rugby consists of various activities that require certain anthropometrical, physical and motor and rugby-specific skills. These components are specific to the positional requirements in rugby (Craven, 1974; De Ridder, 1993; Noakes & Du Plessis, 1996; Malan & Hanekom, 2001; Van Gent, 2003). Du Randt and Headley (1993:112) describe the initial process of talent identification in South Africa as uncontrolled and in the beginning phase. Since then scientific research on talent identification of youth rugby players in South Africa has been done by De Ridder (1993), Pienaar and Spamer (1995, 1998), Hare (1997) and Van Gent (2003), to name but a few. Research has been done regarding positional requirements (Van Gent, 2003) in the adolescent rugby player. However, little is known about the elite schoolboy rugby player in South Africa and internationally.

In 1995, the National Sports Council of South Africa compiled a policy, highlighting the need and importance of a scientific identification and development programme of talented athletes (South Africa, 1996). Eight years after the national policy was compiled, the South African Rugby Football Union (SARFU) launched a major new player identification and development strategy (SARFU, 2003d:15). In 2003, SARFU identified the U/16 age group schoolboys as the first level of talent identification; thus the focus should be on South African schools in particular, because this is the breeding ground for elite athletes. The U/16 and U/18 players are chosen to represent their provinces at a national rugby week. The U/16 and U/18 rugby players chosen at the end of the national rugby week (Grant Khomo U/16 week and the U/18 Craven Week for High Schools) are referred to as the Green Squad. It consists of 100 top players from both the U/16 and U/18 groups (SARFU, 2003b:2).

This study represents a new phase of research on the elite youth rugby player. The significance of this study lies in the compilation of a profile of the U/16 and U/18 elite rugby player, with reference to anthropometrical variables, physical and motor abilities and game-specific skills which will serve as a guide to the school and provincial coaches on team selection and individual training programmes. A further contribution is that this research will support SARFU in the process of identifying and developing youth rugby players. Furthermore, this study will also form part of an international research profile on talent identification of elite youth rugby players as well as the development in school sport. The aim of this study was to compile a status profile of the U/16 and U/18 elite rugby player in South Africa, with reference to anthropometrical variables, physical and motor abilities and game-specific skills as well as a status profile for different playing positions of the U/16 and U/18 elite rugby player in South Africa.
The literature review emphasises the value of sport education and physical education in schools as well as the growth and motor development of the adolescent. According to Dick (1992:125), the adolescent period is the best time for the athlete to develop physical and motor abilities. Physical and sport education in schools offer the adolescent the opportunity to develop certain skills – be it physical, motor, emotional or mental skills. In South Africa, many talented and less talented adolescents have the opportunity to participate in sport due to player development programmes in various sports. Physical and sport education does not only contribute towards improved health-related and skill-related fitness but also aids in talent detection and talent identification programmes. It is also important to fully understand the adolescent’s growth and motor development, as these variables have an influence on sporting performance. The literature review also discusses talent identification models that have evolved over the past decades, as well as talent identification in youth sport and youth rugby development in South Africa. Salmela and Regnier (1983) point out that talent identification is a long process, in which potential athletes are identified and developed in a specific kind of sport. Assessments of talent identification programmes should be done regularly, to ensure optimal sporting achievement for the country as well as optimal individual sporting performance in the future. This could help researchers to adapt regularly to the physical profile of youth rugby players and to establish norms that can be used to identify and develop elite youth athletes.

The empirical study (chapter 4) explains the different measurements and tests that were done with the Green Squad players. The research group consisted of U/16 (n=93) and U/18 (n=97) elite South African schoolboy rugby players, also known as the Green Squad of SARFU. The players of the Green Squad represented all 14 provinces of South Africa. Each player was tested in August 2003 and February 2004 according to a rugby test protocol of SARFU. The test protocol consisted of anthropometrical variables; body height, body mass, body fat percentage, muscle percentage, skinfold thickness and somatotype. The game-specific skill components that were used included ground skills, kicking for distance, passing for distance, passing for accuracy (4 m) and catching and throwing over the crossbar. Physical and motor components consisted of bench press, pull ups, push ups, speed over 10 m and 40 m, agility Illinois test and speed endurance. Descriptive statistics (x, standard deviation, minimum and maximum) were used as well as practical significant differences (d values) (Cohen, 1988). Principal components analysis (PCA) and correlations were used to determine best player position of the Green Squad 2003/2004 season (Bartholomew et al., 2002). The SAS computer programme package of the North-West University, Potchefstroom campus (SAS Institute Inc., 1999) was used for data analysis.

Differences were found between the Green Squad and U/16 rugby players of other studies. Practically significant differences were also found for the U/16 Green Squad players with regard to anthropometrical components from 2003 to 2004. The results of the anthropometrical data of the U/18 Green Squad players compared favourably with those in literature. Although the U/18 Green squad improved from 2003 to 2004 in terms of anthropometrical components, little practical significance was recorded. In terms of physical and motor skills, the U/16 Green Squad players presented more improvements from 2003 to 2004 than the U/18 Green Squad players. This could be the result of growth and training programmes that were followed. However, the U/18
Green Squad players in this study presented a better performance than the U/18 players described in literature, and this could also be due to conditioning and training programmes that were followed. The U/16 and U/18 Green Squad rugby players possessed better game-specific skills in most tests than their counterparts in literature. Differences between national and provincial youth rugby players were recorded with regard to anthropometrical, physical and motor and game-specific components; thus the importance of further studies on the elite schoolboy rugby players is evident. Practically significant differences were found between different playing positions in both age groups, with reference to anthropometrical, physical and motor and game-specific components. It can be concluded that differences do exist between playing positions with regard to anthropometrical, physical and motor and game-specific components and that it is necessary to include the components in a player position test battery.

To summarise, this study succeeded to compile a status profile of the elite youth rugby player with reference to physical and game-specific variables. This test battery can be used in positional talent identification and development models for elite schoolboy rugby players. School and provincial coaches can use this test battery as a guide for team selection and individual training programmes. It adds an enormous amount of knowledge on talent identification of youth elite rugby players.

**Key terms**
Physical and game skills; elite rugby players; South African schoolboys.