

1 SCREENING

Before beginning a sporting season, all players should undergo some process of screening for risk of injury in terms of physical, medical and psychological conditions. The coach has an important role in screening players for injury risk factors, which can be done with some basic screening tests.

This process should take place at the start of pre-season training and be designed to ensure each player is able to withstand the rigours of the sport. Players should be re-screened after an injury to ensure they are ready to return to training and competition. In addition to the screening process that the coach completes, a more comprehensive screening process may be implemented, incorporating all aspects of the players' health. This will require the use of experts such as doctors, sport scientists and physiotherapists.

The Aims and Benefits of Screening

Screening aims to:^[1,2]

- Identify players who may have contra-indications or risk factors for exercise or sport participation
- Detect and identify factors that may predispose players to an increased risk of injury
- Obtain baseline physical data (weight, speed, strength, aerobic endurance)
- Assess the effectiveness of a rehabilitation programme on previous injuries
- Assess lifestyle variables that may affect injury risk and/or performance

Screening provides a wealth of information that can be used for a variety of purposes, all of which will benefit the individual players and the team. The team management can use health information to prepare emergency plans in advance (e.g. having barley sugars available for a diabetic player) and to avoid placing at-risk players in danger under certain circumstances (e.g. a player with asthma needs to take

precautions when playing in cold or polluted conditions and inflammatory medication may react with an epilepsy drug). Results of physical testing and examination allow the coach to set conditioning programmes that are appropriate for each individual. The players' needs can be assessed and catered for (e.g. fitness level, mobility issues). This information can also be used to measure progress and assess the effectiveness of training. Lifestyle advice and assistance can be provided when necessary. Simple things such as improving a player's diet can help to improve performance and decrease injury risk, as can providing transport to training sessions and games so that a player without transport does not arrive already exhausted. Psychological factors also play a part in injury risk and can be included in the screening process (e.g. observing a player's level of risk-taking behaviour during games or assessing a player's level of confidence in their ability).

Best Practice for the Screening Process

Care must be taken when designing the screening process. The information collected must be relevant to the injury prevention process, and privacy and ethical considerations upheld. The coach also needs to know how they will act on the information collected.

A health questionnaire is a first step in the screening process. For children, it is important that a parent or caregiver completes the questionnaire. Known medical conditions of the players such as asthma, diabetes and epilepsy, and their status (e.g. severity, medication) should be listed as should all previous injuries and the treatment(s) they received. All players should be asked about drug use – prescribed drugs, over-the-counter drugs, nutritional supplements and performance-enhancing drugs.

Examination by a doctor is also beneficial as it may identify previously undiagnosed conditions. The health questionnaire should also include a lifestyle assessment. Establishing details of employment/occupation, transport, living arrangements and dietary practices is of potential value as it may identify a variable that if changed could reduce the risk of injury and/or improve performance.

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It is also worth taking note of psychological variables that can affect injury risk such as a player's level of confidence or their attitude towards the opposition. Information gathered in the lifestyle assessment can help to tailor training programmes to individuals' needs.

A physical assessment by a trainer or physiotherapist can identify factors that may place players at greater risk of musculoskeletal injury. Strength, flexibility, balance and anatomical and biomechanical abnormalities should all be evaluated. Having a trainer test speed, aerobic endurance, agility, body composition, strength and power can provide baseline physical information. This can be used to assist the trainer with the physical preparation of the team or individual for the season. Good physical preparation is important as it enables players to cope better with the demands of the sport, thus decreasing their risk of injury. Through a thorough physical assessment players' weaknesses can be identified and addressed with appropriate training before the season starts. If a player's physical qualities make them unsuitable for the desired activity they should be helped to identify suitable alternatives. This may be as simple as changing positions or as serious as changing to another sporting code or withdrawing from sporting competition. Table 1 shows examples of screening form components.

A follow-up screening is important to track players' progress and any changes that have occurred since the last assessment. If a thorough pre-season training is completed, a follow-up physical assessment mid-season is appropriate.

It is important to recognise the needs of children in the screening process. Sport for children should be a safe learning experience, reflecting a balance of fun and friendship. Organised sports tend to attract the more outgoing, competitive children. Those with low self-confidence and poor physical skills are less likely to show an interest. A capable coach can recognise these differences in ability at the screening stage and offer appropriate advice and skills training. Encouraging children of all abilities and confidence levels to participate in sport will help them develop lasting high self-esteem and a positive attitude to physical activity and health.^[3]

In an ideal scenario, management teams would tailor screening procedures for their particular players. Drawing up a suitable health and lifestyle questionnaire may be the first step. Coaches, medical professionals, players and parents could be included in this design process. A battery of physical tests also needs to be established that will assess all the appropriate variables. Examples of standard test procedures can be obtained from the Sport Science New Zealand *Guidelines for Athlete Assessment in New Zealand Sport*.^[4] Once the process has been formalised there has to be a clear understanding of how the information will be used and by whom. Finally, follow-up screening(s) should be scheduled for appropriate times.

This ideal scenario is the upper end of the spectrum of screening and may be beyond the means of non-elite teams and players. However, a less comprehensive procedure will offer reduced but still significant benefits to teams and individual players.

Practical guidelines can be found in the "Screening" section of the *ACC SportSmart Coaches' Kit*.

For information about drugs in sport, including banned substances, visit the New Zealand Sports Drug Agency (NZSDA) website at www.nzstda.co.nz. The NZSDA is a confidential service that protects the identity of the person making an enquiry.

References

1. **Brukner, P. and Khan, K. *Clinical Sports Medicine*. 2nd edition. McGraw-Hill Book Company: Sydney, 2001.**
2. **Hunter, G. Athlete assessment: Injury prevention and screening. *Coaching Focus*, 1995 (29): 11-13.**
3. **Gerrard, D. The dilemma of the young athlete. *New Ethicals Journal*, February 2000, 11-15.**
4. **Bishop, B. and Hume, P.A. (Eds.) *Guidelines for Athlete Assessment in New Zealand Sport*. Sport Science New Zealand: Wellington: 2000.**

COMPONENT	EXAMPLES
Health Questionnaire	<ul style="list-style-type: none"> • Do you suffer from any of the following conditions: asthma, heart disease, diabetes, epilepsy, hepatitis B, other? • Are you on any medication? (please list) • List the injuries that you have had in the past three years and when they occurred e.g. sprained right ankle in middle of last season. • List the treatment you had e.g. on crutches for a while and then sessions with physiotherapist. • Do you remember the name of the doctor/physiotherapist who treated you? (please list)
Lifestyle Assessment	<ul style="list-style-type: none"> • What is your occupation and how many hours do you work per week? • Do you have reliable transport to and from training and games?
Physical Assessment	<ul style="list-style-type: none"> • Endurance: beep test score. • Strength: number of press-ups and chin-ups. • Speed: time for 50m sprint. • Flexibility: hamstring, shoulder, and low back.
Follow-up Screening	<ul style="list-style-type: none"> • Use the same questions and tests as for the previous screening to allow for accurate comparison.

table 1: EXAMPLES OF SCREENING FORM COMPONENTS