



Netball Australia Disordered Eating, Early Identification and Prevention Guidelines

1 February 2025

NETBALL AUSTRALIA DISORDERED EATING, EARLY IDENTIFICATION AND PREVENTION GUIDELINES

In the spirit of Reconciliation, Netball Australia acknowledges Aboriginal and Torres Strait Islander peoples as the Traditional Custodians of this ancient unceded land where we live, work and play netball on.

We honour the continuing cultures, languages, and heritage of Aboriginal and Torres Strait Islander peoples whose cultural, spiritual, and ancestral connections to the lands, sky, and waters has endured since time immemorial.

We pay our respects to Elders past and present, and we acknowledge and value the significant and continuing contributions Aboriginal and Torres Strait Islander peoples make within our community.

Netball Australia is committed to Reconciliation. We acknowledge the need to reflect on our shared history in order to build a vision for a reconciled and prosperous future for all within our sport. One built on mutual respect, equity, authentic collaboration, and genuine truth-telling.

Where relevant, in this Guidelines – reference to Netball Australia includes Suncorp Super Netball and the Confident Girls Foundation.

Netball Australia has adapted this Disordered Eating, Early Identification and Prevention Guidelines from the Australian Institute of Sport (AIS) and the National Eating Disorders Collaboration (NEDC) Disordered Eating in High Performance Sport Position Statement and the Queensland Academy of Sport Physique Assessment Guidelines and acknowledges the authors of those documents.

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A. Purpose

Disordered eating (*DE*) and eating disorders (*EDs*) are serious and complicated issues that can affect the health and performance of ALL athletes across the high-performance pathway, from junior to senior levels. Netball Australia (*NA*) endorses the Australian Institute of Sport (*AIS*) and the National Eating Disorders Collaboration (*NEDC*) Disordered Eating in High Performance Sport Position Statement (the *Position Statement*) (link [here](#)). These Guidelines are to be read in conjunction with the Position Statement.

The purpose of these Guidelines are to:

- (a) provide guidance and clarity for the implementation of practices required to provide a healthy sport system; and
- (b) to support and nurture our Athletes.

The appropriate management, early identification and prevention of DE in Athletes is important, particularly given the significant ramifications on an athlete's health (both mental and physical) and performance. NA prioritises the health and wellbeing of our Athletes and believe all role holders have a part to play in supporting these objectives.

NA recognises that there are two categories of Elite Programs (the traditional high performance pathway programs (that include the National Netball Championships, SSN, Australian Representative Squads) and other programs supported or endorsed by NA (such as the participation of the Australian Kelpies Men's Netball Team in International Test Series, the PacificAus program, Marie Little Shield and other Sub-Elite Programs, the *Sub-Elite Programs*).

For the Sub-Elite Programs, NA has limited oversight of these programs, servicing, delivery and personnel and that the sports science and sports medicine servicing will vary from program to program (including funding available).

Accordingly, these Guidelines do not apply to Participants in the Sub-Elite Programs.

B. Scope and Exclusions

These Guidelines apply to Participants, NA and Netball Organisations.

These Guidelines do not apply to the Sub-Elite Programs or community netball.

C. Definitions

Defined terms not otherwise defined in these Guidelines have been defined in, and have the meaning given to them in the Sports Medicine Policy for Elite Netball and the Netball Integrity Policy Framework, Conduct & Disciplinary Policy.

In these Guidelines, the following definitions apply:

Body image means the perception that an Athlete has about their physical self and the thoughts and feelings that result from that perception.

Positive body image occurs when an Athlete is able to accept, appreciate and respect their body. A positive body image is one of the protective factors that can make an athlete more resilient to developing an eating disorder.

Body image dissatisfaction occurs when an athlete has negative thoughts and feelings about their body and can result in a fixation on trying to change their body. This can lead to unhealthy food and exercise practices and increase the risk of developing an eating disorder.

Core-Multidisciplinary Team (CMT) means a team of professional practitioners (doctors, sports dietitians, psychologists) who collaborate in the management of disordered eating cases within a Team.

Disordered eating (DE) means a range from what is commonly perceived as normal dieting to reflecting some of the same behaviour as those with eating disorders, but at a lesser frequency or lower level of severity. DE can occur in any athlete, in any sport, at any time, crossing boundaries of gender, culture, age, body size, culture, socio-economic background, athletic calibre and ability.

Eating disorder (ED) means a serious but treatable mental illness with physical effects that can affect any athlete. Feeding and eating-related disorders are defined by specific criteria published in the diagnostic and statistical manual of mental disorders (DSM-5) which include problematic eating behaviours, distorted beliefs, preoccupation with food, eating and body image, and result in significant distress and impairment to daily functioning (e.g. sport, school/work, social relationships).

Energy availability (EA) means the amount of energy that is available to support the body's activities for health and function once the energy commitment to exercise has been subtracted from dietary energy intake. Energy availability = (Energy intake - Energy cost of exercise)/Kg fat free mass.

Low energy availability (LEA) occurs when there is a mismatch between energy intake and exercise load, leaving insufficient energy to cover the body's other needs. It may arise from inadequate energy intake, increased expenditure from exercise, or a combination of both, and is either advertent or inadvertent.

NIN/Academy comprises the Australian Institute of Sport (AIS) and the eight State and Territory Institutes and Academies of Sport (SIS/SAS).

Relative Energy Deficiency in Sport (REDS) means the syndrome of impaired physiological function including, but not limited to, metabolic rate, menstrual function, bone health, immunity, protein synthesis and cardiovascular health that arises from low energy availability.

Spectrum of eating behaviour means in the high performance Athlete optimised nutrition to disordered eating to an eating disorder. All Athletes sit on this spectrum and individuals move back and forth along the spectrum at different stages of their career, including within different phases of a training cycle.



Optimised nutrition means a safe, supported, purposeful and individualised approach. It promotes healthy body image and thoughts about food, and is adaptable to the specific and changing demands of an athlete's sport.

D. Other Related Policies and Documents

The following NA policies and documents also apply to the application of these Guidelines:

- a) Netball Integrity Policies;
- b) Sports Medicine Policy for Elite Programs;
- c) Child Safeguarding Policy;
- d) NA Tribunal Rules;
- e) National Anti-Doping Policy;
- f) Related Sports Medicine Policies.

AIS-NEDC position statement on disordered eating in high performance sport ([LINK](#))

REDS Return to Play Clinical Assessment Tool ([LINK](#))

1. Early identification

- 1.1 NA recognises that early identification of changes in an Athlete's thoughts around their body image and/or eating behaviours (along the Spectrum of Eating Behaviour) is important in allowing a greater opportunity for reversal and recovery. NA recognises that the most useful tool in assessing the presence of DE or an ED in an individual athlete is a clinical interview with one or all members of the Core Multidisciplinary Team (*CMT*).
- 1.2 All individuals within NA and each Netball Organisation however play an important role in early identification and fostering safe and health environments for all Athletes.

2. The Core Multidisciplinary Team

- 2.1 NA recognises that the professions of the CMT provides a vital function in the early identification, assessment, diagnosis, treatment (where appropriate) and referral (as required) of DE and EDs.
- 2.2 NA has established a CMT comprised of its Chief Medical Officer (CMO), Dietitian and a psychologist for NA delivered Elite Programs.
- 2.3 Within SSN Clubs and a Member Organisation, the CMT would be made up of the team doctor, dietitian and team psychologist if available otherwise a community psychologist with experience in treating DE/ED should be included in the team.
- 2.4 Wherever possible, it is recommended that the CMT include an ED credentialed practitioner across either the team doctor, dietitian or psychologist.
- 2.5 The referral pathway and communication processes, established by the NA CMO, NA Dietitian and Head of Wellbeing Strategy provide a guide to effectively and safely manage referred Athletes from within the Elite Programs identified with DE or EDs.
- 2.6 NA recognises that not all Athletes participating in the Elite Programs have direct access to specialised service providers who manage DE/ED. Pathway Athletes are encouraged to seek support from recognised and specialised

DE/ED professionals should this support not be available within their Member Organisation/NIN/Academy.

3. Diagnosis

- 3.1 DE and ED are prevalent in the high performance athlete population with the cause being multifactorial. Emphasis on body composition in relation to performance or aesthetics, in combination with individual vulnerability factors, such as personality traits, are some contributing factors. Specific eating disorders such as Anorexia nervosa and Bulimia nervosa are serious psychiatric conditions that can affect athletes. Both disorders have high morbidity rates and therefore specialist review and early treatment is critical.

4. Treatment

- 4.1 If an Athlete is diagnosed with a DE/ED, a multidisciplinary care team approach is indicated including but not limited to the CMT. Engaging external mental health expertise in the treatment approach as well as the family where appropriate is recommended.
- 4.2 Dependent on the severity of the illness, there may be requirement for involvement of a psychiatrist, which is to be determined by the CMT. It is essential that Athletes are supported by a practitioner with experience working with eating disorders. In severe cases, these conditions may require in patient care, and this should be coordinated with the treating psychiatrist.

5. Return to Play

- 5.1 An Athlete identified with DE may need training modifications or exclusions to minimise the risk of potential injury and/or illness. Whilst there are no specific DE or ED return to play guidelines for Athletes, given the individualisation of support and care programs, the CMT will work with any external ED treatment team to ensure the return to play of an Athlete is appropriate for their individual case.
- 5.2 The CMT should work together with coaches and other performance team members to ensure an individual approach is taken to the Athlete's training regime, in consultation with the Athlete. There may be a requirement to remove the Athlete from all training and matches dependent on the severity of illness. These needs should be discussed with the Athlete prior to disclosing confidential information to other Athlete Support Personnel.

See other documents - REDS Clinical Assessment Tool as an example of an exclusion and return to play guideline.

6. Menstrual function in female athletes

- 6.1 NA recognises the importance of healthy menstrual function in our female Athletes. Team doctors should encourage an open dialogue with Athletes regarding their menstrual cycle and aim to educate and empower women in relation to their menstrual health and wellbeing.
- 6.2 Menstrual dysfunction in elite athletes is common and can be caused by a number of conditions including but not limited to primary amenorrhea and secondary amenorrhea causes such as Polycystic Ovarian Syndromes (PCOS) and LEA/REDS. Any menstrual irregularities should be investigated with a doctor and may require specialised referral to an endocrinologist and/or gynaecologist who have experience working with female athletes.

- 6.3 Menstrual cycle tracking including of associated symptoms can assist women to understand their individual cycle variation and the impact on their sporting performance. Athletes should be encouraged to individually track their menstrual cycle. All Team or Club menstrual cycle tracking must have clear oversight by the Team doctor and data obtained must be managed confidentially. Team clinicians should refer to the [AIS Menstrual Tracking Guidelines](#) for further information.
- 6.4 The Female Performance & Health modules freely available to athletes and Team healthcare personnel to develop knowledge, awareness and management strategies in relation to the menstrual cycle and female athlete health are available via the AIS.

7. Low energy availability (LEA) and other signs of Relative Energy Deficiency in Sport (REDS)

- 7.1 REDS results from a relative mismatch between energy expenditure and energy intake leaving inadequate energy availability to support body functions for optimal health and performance. Energy availability is the term used to explain the amount of dietary energy remaining after metabolic processes and needs for exercise training have been accounted for. It has wide ranging effects including metabolic function, reproductive function, musculoskeletal health, immunity, glycogen synthesis, cardiovascular and haematological health which can lead to impaired well-being, increased injury risk and reduced performance. It can occur in the setting of an eating disorder or mismanaged diet. There are screening tools available that can be useful to help identify athletes at risk of LEA including but not limited to Low Energy Availability in Females Questionnaire (LEAF-Q), Low Energy Availability in Males Questionnaire (LEAF-M) and REDS Specific Screening Tool (RST).
- 7.2 Athletes should be referred for appropriate professional assessment (or to the CMT where this exists within an organisation and is available to the Athlete) and support in the circumstances below:
- Any Athlete with known or suspected DE or suspected LEA including those with pathology results suggestive of LEA;
 - Any Athlete who is diagnosed with a bone stress injury and/or identified with menstrual dysfunction; or
 - Any Athlete with recurrent injury, illness or change in their mental health.

8. Prevention of Disordered Eating

- 8.1 NA recognises the ideal of preventing DE and EDs within the high performance sporting environment via education, support for optimised nutrition and positive body image in Athletes, and appropriate assessment of body composition. The health and well-being of Athletes must be prioritised over aesthetics or perceived body composition requirements for performance.

9. Education

- 9.1 NA supports the education of Athletes, and Athlete Support Personnel to assist in early identification and prevention of disordered eating and body images issues.

10. Optimised Nutrition

- 10.1 NA recognises that Athletes should be able to access nutrition support that meets the criteria for optimised nutrition; a harmony between health and performance underpinned by concepts that are safe, supported, purposeful and individualised.

11. Role of Body Composition

- 11.1 Monitoring of body composition with use of skin folds and other body composition testing methods are useful high performance tools and information gained from this assessment should be integrated into an appropriate personalised plan for each Athlete. Importantly, all body composition assessments should be justified, have a supporting rationale and must not be used in a punitive, derogatory or non-informative way.
- 11.2 NA recognises that the assessment of body composition is a common part of Athlete assessment and needs to be appropriately implemented to safeguard the Athlete's health and well-being. Appropriate implementation includes a range of considerations including but not limited to the need for assessment, selection of assessment technique/s, implementation of protocols and dissemination of results including confidentiality, informed Athlete consent and secure storage of data. Prior to assessment, education should be provided to Athletes regarding rationale, protocols, benefits, risks, data confidentiality and data storage.
- 11.3 The NA Physique Assessment Guidelines apply (see Appendix 1) and should be referred to prior to any body composition testing. Where an Athlete is under the care of a CMT, the CMT should consider the NA Physique Assessment Guidelines and the Athlete's health and wellbeing.

12. Body image

- 12.1 NA recognises that a Positive Body Image is one of the protective factors that enable an Athlete to be more resilient to developing DE or an ED. Appropriate support should be provided to Athletes to encourage a Positive Body Image, using activities targeted at groups and individuals.

13. Use of language

- 13.1 Positive language must be used when speaking with and about Athletes and their bodies. Athletes and Athlete Support Personnel must receive education around such language. NA believes all bodies deserve to be treated with respect, no matter their size, shape, composition, colour or ability.

14. Transition periods

- 14.1 NA recognises that there are a number of transition periods in an Athlete's life that may place them at an increased risk of DE including, but not limited to:
- Early start of sport specific training;
 - Making a senior team at a young age;
 - Retirement (forced or voluntary);
 - Non-selection or de-selection;
 - Injury, illness, mental health deterioration, surgery, time away from sport and training;
 - Major life transitions e.g. moving away from home, moving between schools, moving overseas, transitioning SSN clubs, other change in personal circumstances such as relationship break down;

- Preparation for and competing in a benchmark event (e.g. in the selection process, the period prior to the event, during and after the event).

14.2 NA and Netball Organisations will seek to identify states of elevated risk and apply appropriate support around the Athlete at these times, with activities involving the Athlete Support Personnel or the CMT directly.

15. Working with minors

15.1 NA recognises working with minors requires appropriate care and consideration for this population. See the Safeguarding of Children and Young People Policy for more information.

15.2 Whilst DE can occur at any age, we understand that adolescence is a formative time in the development of an athlete's body image and eating behaviour. Athletes in this age group should be provided with appropriate education and support to assist in the development of optimal body image and eating behaviours.

15.3 A registered medical professional is responsible for determining if and when a Child Athlete's family will be informed of DE or an ED. Whilst patient confidentiality is important, there are times when the Athlete's family will need to be informed.

END

VERSION HISTORY

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Appendix 1: Netball Australia Physique Assessment Guidelines

1. INTRODUCTION

The NA Physique Assessment Guidelines provide a clear, operational framework for physique assessment practices, thereby providing recommendations for sports dietitians, medical practitioners, Athlete Support Personnel, coaches, and most importantly, Athletes themselves.

It is widely recognised that size, shape, and body composition can influence athletic performance. These physique traits vary across an Athlete's career due to growth, development and maturation, injury, illness, and phase of training (e.g., off season/peak season). Changes to body composition can also occur via purposeful training and dietary intervention undertaken with careful guidance and monitoring from Athlete Support Personnel.

In conjunction with tracking performance variables, monitoring physique parameters can provide valuable information for Athletes, coaches, and certain Athlete Support Personnel regarding the relationship between specific physique traits and performance in a particular sport, and the efficacy of training and dietary manipulation strategies.

Optimisation of an Athlete's physique for performance outcomes may take a significant time to achieve. Progress may be hard to determine when minor changes are required to elicit noticeable performance outcomes. Consistent, accurate, and appropriate body composition data collection is required to assist in this process. To ensure consistency and accuracy, the process undertaken during physique assessments should be standardised across the organisation. Factors such as Athlete suitability for testing, testing method, frequency of data collection, Athlete preparation, interpretation of results and privacy should be considered.

Whilst Dual-energy X-Ray Absorptiometry (DXA) scans are currently conducted by an external provider, collection of height, body mass and surface anthropometry (skinfold) data are currently undertaken by both NA and Netball Organisation Athlete Support Personnel. Therefore, organisational, cross-discipline collaboration is required to ensure that methods of data collection and feedback to coaches, Athletes and certain Athlete Support Personnel are consistent and prioritise the well-being of the Athlete.

NA operates under the philosophy that Athletes are well informed regarding the benefits and risks of undertaking physique assessments, and empowered to have full autonomy over body composition assessments in terms of method and frequency of data collection and how (and with whom) data is shared and used. Athletes should always be informed of the benefits and risks to partaking in body composition assessment and without consequence, choose to withdraw their participation and or sharing of information at any time. Athlete selection criteria should not be associated with a specific weight or body composition target, but rather performance outcomes.

NA recognises that physique assessment and ongoing monitoring has the potential to cause concern for some Athletes. Performance-focussed physique assessment practises that are undertaken in supported environments by qualified, well-trained professionals for personalised interpretation and intervention may play a role in reducing concern for Athletes. In any physique assessment undertaken, the priority should always be Athlete physical and mental well-being. Athlete Support Personnel must operate first and foremost under the philosophy to "do no harm".

These guidelines do not provide a detailed summary of Best Practice protocols in the use of surface anthropometry and DXA methodology. This document does however direct the

reader to complementary resources relating to considerations regarding physique assessment (see Schedule 3).

2. ATHLETE SUITABILITY FOR PHYSIQUE ASSESSMENTS

Any body composition assessment must be justified and have supporting health or performance rationale that is documented and shared with the Athlete, and with consent, their Athlete Support Personnel. The following should be considered by Athlete Support Personnel before commencing physique assessments of an Athlete:

- (a) A decision to measure body composition requires **evidence for association between physique traits and competitive success** within the sport and/or at which level the Athlete is competing. Body composition in isolation is not a performance measure and should be collected and interpreted **alongside other measurements of performance** to offer insight into the impact of physique changes on performance metrics.
- (b) The **age and maturity of the Athlete**, noting that an Athlete's physique will change throughout puberty. Consider how their developmental stage may influence data collection methods and interpretation of results, specifically for their sport.
- (c) The short, medium, and long-term **goal of an Athlete** and how their physique traits may interplay with this.
- (d) Practically, the availability of an **appropriate setting** in which testing can be undertaken, particularly if it is to occur in the daily training environment. The physical environment for testing should be private and comfortable for the Athlete. Where the Athlete is under 16, an appropriate guardian of the Athlete's choosing is required to be present. All Athletes, regardless of age, are able to seek the presence of a support person during assessments.
- (e) The ongoing support of **appropriate personnel** (sports dietitians/sports medicine doctors/sports scientists) around the Athlete to assist with **interpretation and contextualisation of the results**.
- (f) The **presence of any known pre-existing body image concerns, disordered eating behaviours or eating disorders** amongst the Athlete cohort.

Note: Where an Athlete may choose not to share these issues or concerns with the wider Athlete Support Personnel or coaches, Athlete confidentiality will be maintained.

Athlete Support Personnel and coaches should support any advice from the program's CMT (see the Disordered Eating, Early Identification and Prevention Guidelines) when an Athlete may require a different testing schedule, method of feedback, or require removal from the testing schedule for their mental or physical well-being. There should be no real, or perceived ramifications for Athletes in these circumstances.

- (g) Athlete performance plans, contracts and selection criteria **should not be associated with a specific weight or body composition target**, but rather performance outcomes (however, understanding that physique and body composition manipulation may be part of the broader process required to achieve that outcome).

- (h) **Individual Athletes** within a program should not be singled out for testing, or more frequent testing, unless related to performance or health goals, or monitoring for a specific training or dietary intervention.

3. METHODOLOGY AND FREQUENCY OF DATA COLLECTION

i. DETERMINING BODY COMPOSITION ASSESSMENT METHOD

The physique assessment method chosen for the Athlete should reflect body composition parameters that affect performance for the Athlete in their chosen sport.

- (a) **Dual-Energy Xray Absorptiometry (DXA):** provides information regarding changes in an Athlete’s lean mass, fat mass, and is indicative of bone mineral density status. The need for DXA imaging is dependent upon the necessity for an absolute estimation of body composition and other factors such as Athlete location and access to appropriate DXA scanning services and technicians.
- (b) **Surface Anthropometry (Skinfolds):** provides a practical, reliable, accessible alternative when conducted by providers with appropriate kinanthropometric training and is most helpful for measuring acute changes in subcutaneous adipose tissue. Often accompanied with other measures such as height, body mass, breadths and girths.

When combined with body mass data changes, skinfolds can provide insight into relative physique trait changes, including fat mass and lean mass changes. Surface anthropometry must be undertaken by an appropriately qualified Sports Scientist or Sports Dietitian holding at minimum, a current Level 1 International Society of Anthropometry and Kinanthropometry (ISAK) accreditation.

TABLE 1: Advantages and limitations of physique assessment methods

METHOD OF ASSESSMENT	ADVANTAGES	LIMITATIONS
DXA SCAN	<ul style="list-style-type: none"> • Non-invasive • High validity • High reliability • Suitable for most Athletes • Provides regional body composition values • Quick (10-15 mins) • Low radiation dose 	<ul style="list-style-type: none"> • Conducted offsite • Financial considerations • Use of different machines makes comparative data between scans less valid • Requires trained technician • Methodology requires modification for larger Athletes • Requires strict compliance to pre-test preparation procedures • Not suitable for pregnant athletes
SURFACE ANTHROPOMETRY (SKINFOLDS)	<ul style="list-style-type: none"> • Inexpensive • Safe • Portable • Quick (10 mins) • Minimal equipment required • Highly reliable if anthropometrist is experienced, consistent and completes reaccreditation qualification as per ISAK guidelines 	<ul style="list-style-type: none"> • Certified tester expertise required • Measures one compartment only (i.e., subcutaneous fat, although can provide indirect estimate to changes in lean mass) • Required subject to wear minimal clothing, and hands-on contact from practitioner, which may be uncomfortable for some Athletes.

ii. DETERMINING BODY COMPOSITION ASSESSMENT FREQUENCY

It is recommended that Athlete Support Personnel, agreed with the Athlete develop an agreed plan that outlines the frequency of physique assessments, aligned to other performance measures across the Athlete’s training and competition blocks. Unjustified, periodic assessment should be avoided.

In general, body composition data collection should be taken no more frequently than other assessments of fitness and performance traits. Measurement frequency should align with accepted guidelines around the sensitivity of the chosen testing method to detect changes (see table 2).

Where the frequency of body composition assessments deviates from these guidelines, then a strong rationale considering the magnitude of change, the time frame over which that change is likely to occur, and the sensitivity of the measurement should be formulated. This clear rationale is warranted to avoid over-interpretation of “noise” associated with measurement error, which can cause unnecessary anxiety for an Athlete, but also distract from other components of performance preparation.

Such decisions should be made in collaboration with the Athlete and Athlete Support Personnel agreed with the Athlete, in an environment that provides adequate education and support, and that prioritises Athlete health and wellbeing.

TABLE 2: Frequency of Data Collection

PARAMETER OR METHOD	FREQUENCY
HEIGHT	>18yrs: Annually <18yrs: Bi-Annually (or more frequently if Athlete is undergoing significant growth and development)
BODY MASS	As required and when aligned to other health, performance or physiological testing parameters. Examples include determinations of force/strength/power output, fluid balance and hydration assessments etc. Monitoring of body mass without a specific performance or health purpose is not to be undertaken.
DXA	DXA ANZBMS guidelines typically recommend a minimum of 8-12 weeks between subsequent DXA assessments of body composition.
SURFACE ANTHROPOMETRY (SKINFOLDS)	Surface anthropometry Assessments should be taken no more frequently than 4-6 weekly, and always with purpose and alongside other measurements of performance to offer insight into the impact of physique changes on performance metrics, or athlete health. Where there is an identified purpose for the strategic manipulation of body composition to facilitate optimal health or performance or eligibility to compete (e.g., weight category sport), alternate frequency of monitoring may be required to evaluate the intervention. This should be carefully considered on an individual basis and Athlete agree to the schedule of testing, noting that they can withdraw from testing at any time.

iii. PRE-DATA COLLECTION CONSIDERATIONS

ATHLETE EDUCATION AND PREPARATION

Athletes should be provided with the appropriate NA Physique Assessment Fact Sheet prior to their body composition assessment (see Schedules 1 & 2 for Surface Anthropometry (Skinfolds) Information Sheet and DXA Scans Information Sheet).

The proposed schedule of testing should be discussed with the Athlete by the Athlete Support Personnel and agreed by the Athlete. This communication process creates an opportunity for Athletes to ask questions, share concerns, and/or seek clarification on any aspect of the process, and provides an opportunity for education regarding the following:

- (a) Benefits and risks of the physique assessment.
- (b) How the physique assessment aligns with their broader performance plan.
- (c) Preparation requirements to ensure the measurements are standardised.

- (d) How the information will be interpreted and shared with Athlete/coach/performance support team.
- (e) How the data will be stored.

ATHLETE CONSENT

Informed consent must be provided prior to any body composition assessment whereby the Athlete acknowledges the rationale for the assessment, what measures will be used, with whom the information may be shared and on what basis, and how the information will be stored. Body composition assessment data obtained is confidential medical information and may only be shared with identified non-medical staff with the consent of the Athlete. If an Athlete does not provide consent, there must be no negative consequences or ramifications from their decision.

It is the responsibility of the sports scientist and/or sports dietitian undertaking the testing to ensure that Athletes have signed the “*Consent to Testing, Assessment and Treatment*” document prior to data collection. This document is located within the Athlete Management System (AMS).

Athletes under the age of 18 require parental or guardian consent.

EQUIPMENT

The practitioner collecting data is to ensure that correctly working and appropriately calibrated surface anthropometry equipment is available for upcoming assessments including scales (and presence of a solid/stable surface for scales to measure upon), calipers, measuring tapes and stadiometer.

iv. DATA COLLECTION CONSIDERATIONS

- (a) At the time of data collection, Athletes are to be reminded that their participation is voluntary and that they have autonomy in the distribution of the results. Thereafter, **verbal consent** to data collection and data sharing is to be collected and recorded in AMS. In accordance with the Safeguarding of Children & Young People Policy, if the **Athlete being tested is under the age of 18, there must be a guardian present in the room**. All Athletes, regardless of age, are able to seek the presence of a support person during assessments.
- (b) Efforts must be taken to **standardise variables** that affect body mass, for example:
 - 1. Measurements should be taken at the same time of day.
 - 2. The Athlete is required to empty their bladder before testing.
 - 3. Testing on similar days of a training program (e.g., to account for rest days or training sessions that may deplete glycogen stores or cause significant dehydration).
 - 4. An assessment of hydration status to accompany body mass data (e.g. Urine Specific Gravity (USG), Bioimpedance Analysis (BIA)).
- (c) **All results are to be recorded in AMS.**
- (d) All reasonable precautions should be made to protect the **privacy of the results**. Testers should not verbalise the results in the presence of other Athletes, coaches, staff or bystanders.
- (e) **Adequate time** should be allowed for testing, including obtaining necessary consent, landmarking, testing, and recording of results in duplicate or triplicate where required.

v. INTERPRETATION AND PRESENTATION OF RESULTS

- (a) The sports scientist and/or sports dietitian may provide results at the time of testing where there is an opportunity to interpret the data sufficiently to provide meaningful feedback (i.e., in the context of performance parameters, goals of the Athlete and their acute training environment).
- (b) Interpretation of results can often be nuanced and complicated, so in instances where the Athlete requires a more comprehensive discussion, a subsequent feedback session should be scheduled. This allows certain Athlete Support Personnel as agreed by the Athlete to discuss the results and provide feedback in the context of the Athlete's broader performance plan.
- (c) Given inter-tester variability, historical data collected by another practitioner should not be used for direct comparisons. Trend comparisons may still be possible.
- (d) Where possible, interpretation of results should include comparative historical data of the Athlete. However, consideration should be given to variability of results when historical data was collected during:
 - 1. Training or competition cycle phases.
 - 2. Different developmental stages of Athletes (e.g., during puberty).
 - 3. Different physical states (e.g., euhydrated vs dehydrated).

Note: If these factors are known to have affected results, they should be recorded on the individual anthropometry form in AMS.

- (e) Conversations with Athletes should occur confidentially, not in a group setting. This can be sensitive for some Athletes, so a particular member of the Athlete Support Personnel may be best placed to deliver this information.
- (f) Care should be taken in the use of language and explanations around changes in body composition for Athletes.
- (g) Any intervention suggestions should be provided in the context of an Athlete's health or performance only.
- (h) Where a dietary or training intervention is sought to alter an Athlete's body composition, the Athlete should engage regularly with the program's sports dietitian or referred to a suitably qualified and experienced accredited sports dietitian. Athlete Support Personnel including coaches, sports scientists and other staff should refrain from providing specific, detailed dietary advice to Athletes.

vi. DATA STORAGE AND PRIVACY

- (a) Athlete results are stored confidentially within AMS.
- (b) Physique assessment data should not be displayed in a common area (e.g., on a visible sheet on the day of data collection) nor be accessed by Athlete Support Personnel without Athlete consent.

SCHEDULE 1: Skinfolds – A Fact Sheet for Athletes



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Surface Anthropometry (Skinfolds) - A fact sheet for Athletes

What is Surface Anthropometry (Skinfolds)

When combined with a measurement of your current weight, surface anthropometry (known as skin folds) is a common method for assessing and monitoring body composition and changes over time. Callipers (see picture) are used to measure the thickness of a 'fold' or pinch of skin at consistent locations on the body. When surface anthropometry measurements are taken by qualified and experienced practitioners, they are a reliable and accurate method for measuring changes in body composition. When revised in the context of your overall performance, this information can provide you and your athlete support team with valuable information about how you are adapting to training and the effect of nutrition interventions provided by your program Sports Dietitian.

Where do I get my skinfolds done?

Skinfold data collection should be performed in a private area and such as a consultation room. Your program Sports Dietitian will arrange a suitable time and location. Your Sports Dietitian will always ensure you are feeling comfortable in your environment before commencing skinfold collection and recognise that undergoing physique and body composition assessments may cause anxiety and stress for some athletes. If you have ANY queries or concerns about the data collection process, or the way your information will be shared or stored, please take to a member of your athlete support team, or the Team Doctor.

You are always in control of what information is collected, how it is collected and with whom it is shared.

How do I prepare for Skinfolds?

One of the advantages of surface anthropometry is that it is simple to prepare for, and quick to perform. For the best results, it's important to use a standard protocol each time. Prepare in the following way:

FOODS & FLUIDS: You are not required to fast or follow a particular way of eating beforehand, however you should try to maintain your usual food and fluid intake. If you eat quite similarly day to day, then simply do as you normally would. As part of the interpretation of surface anthropometry relates to your measured weight on the day, your hydration status is important.

RECENT TRAINING: Avoid any intense training immediately before (ie ~4 hours prior to) skinfold testing. Skinfolds are preferably performed early in the morning before training for the day.

CLOTHING: Wear practical clothing for testing. For males, loose shorts, and for females, shorts and a crop top are appropriate.

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What to expect on the day?

Measurements involve locating and taking a measurement at 7 different sites on the body (biceps, triceps, shoulder, 2 sites on the abdomen, thigh and calf). Your Sports Dietitian will locate and mark each of the areas with a small cross, then measure using the callipers. 'Marking up' ensures that every time your skinfolds are collected, they are taken in the same spot. This will help with accuracy and repeatability of the process.

To take the measurement, a fold of skin at each site is lifted and pinched with callipers. It doesn't hurt, just a slight pinch.

To ensure accuracy, the measurements are taken twice. The entire process will usually take about 10 minutes. Your weight and height will be recorded at the same time.

Your Sports Dietitian will also check with you on the day to ensure you are happy to proceed with collection of data and the sharing of this information with relevant members of your athlete support team.

Results & Support

Converting skinfolds to percent body fat (%BF) is a 'doubly indirect' assessment of body composition and introduces some error. Instead, the sum of the 7 sites (in millimeters) is used to monitor and compare changes over time and estimate change in lean muscle mass.

Once collected, your results will be reviewed and interpreted in the context of other performance parameters, alongside your training and competition goals. Your practitioner may prefer to deliver your results after this has occurred. Timely feedback will be provided to you and members of your athlete support team with your permission. This may include your coach, Team Doctor, S&C and even your parents if you are a junior athlete.

Always remember to stay connected to your program Sports Dietitian. They can assist you in interpreting the results and trends and guide you appropriately if any changes to your diet are needed. If skinfold collection is causing you worry or concern, reach out to someone you feel comfortable discussing this with who can then make contact with relevant members of your athlete support team (with your permission).

Netball Australia has adapted this Fact Sheet from the Queensland Academy of Sport Physique Assessment Guidelines and acknowledges the authors of the QAS Sport Physique Assessment Guidelines

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SCHEDULE 2: DXA Scans – A Fact Sheet for Athletes



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DXA Scans - A fact sheet for Athletes

What is a dual-energy x-ray absorbiometry (DXA) scan?

A DXA scan has been typically used to measure bone mineral density, however it can also be used to assess body composition by measuring bone mineral content, lean muscle mass and body fat levels. It is quick, painless, non-invasive and gives instant results.

The scan itself takes about 10 minutes and exposes you to a small amount of radiation. The dose of radiation received is equivalent to about 1/100th of the radiation received on a 7 hour plane flight. At this dose, no harmful effects have been demonstrated, as any effect is too small to measure. Therefore, the risk is believed to be minimal.

Athletes that are pregnant or potentially pregnant should not undergo DXA scans.

We recognise that undergoing physique and body composition assessments may cause significant anxiety and stress for many athletes. If you have ANY queries or questions about this process, the data collection process, or the way your information is stored or shared, please talk to a member of your athlete support team.

You are always in control of what information is collected, how it is collected and with whom it is shared.

Location & booking information

Your scan will be conducted by a licenced operator and all safety protocols will be followed.

When you arrive, you will be asked to sign a DXA consent form each time you have a scan.

How do I prepare for your DXA scan?

To ensure best results, it is important to minimise biological variability as much as possible, by adhering to a standard protocol each time you have a scan. This simply means replicating what you do in the lead-up to your DXA scan as closely as possible, each time. An easy way to do this is to record your activity and your food and fluid intake over the 24 hours prior to your first scan.

FASTED: it is critical you arrive after an overnight fast, with no food or fluid intake on the morning before your scan.

DO NOT consume anything before you arrive, including water. If you have a specific medical condition that would prevent you from fasting prior to your DXA scan, please discuss this with your Sports Dietitian.

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EMPTY BLADDER: You will be asked to empty your bladder before your scan.

HYDRATION STATUS: increase your fluid intake with meals and snacks the previous day to ensure you are well hydrated on the morning of your scan. You may be requested to provide a waking urine sample to check your Urine Specific Gravity (USG). This is an indicator of your hydration status at the time of the scan.

CARBOHYDRATE INTAKE: maintain your usual carbohydrate intake, don't increase or decrease your intake the day before the scan. If you are someone who eats quite similarly day to day, then just eat as you usually do. If you vary your intake day to day, it is strongly suggested that you write down what you eat and drink the day before your first scan, so that you can repeat this as closely as possible the day before future scans.

RECENT TRAINING: avoid any hard or intense training late in the evening prior the day of your scan. Keep a record of the training that you do 24 hours prior to your scan and where possible, ensure your training the day before is similar each time you scan. Or even easier, if your training program repeats week to week, consider having your scan on the same day each time.

RESTED: ideally you should be scanned when there is limited 'movement' through your body compartments. Moving as little as possible prior to your scan is preferable for most accurate results, so parking as close as possible (or getting dropped off) to your scan location is ideal. Aim to leave adequate time so that you do not need to rush, as physical exertion prior to scanning can alter your results.

CLOTHING: wear figure-hugging clothing so you can be positioned correctly on the scanning bed.

METAL CLOTHING & JEWELLERY: all metal jewellery, hair accessories, or clothing with metal zips, tags, buttons, or eyelets will need to be removed prior to DXA scanning. Be prepared and check your attire before you leave home. Some active wear will have small metal tags so keep this in mind.

RESULTS & SUPPORT: stay connected to your program Sports Dietitian - they can assist you in interpreting DXA results and trends, and guide you appropriately to enhance performance through physique change.

TIP: If you have training after your scan, please remember to bring your pre-training snack or breakfast and fluids to have afterwards.

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SCHEDULE 3: RESOURCES RELATING TO CONSIDERATIONS IN PHYSIQUE ASSESSMENT

For more information on Best Practice for each methodology, see current literature including (but not limited to):

Stewart, A.D et al., 2011. ISAK: International standards for anthropometric assessment., Lower Hutt, NZ: International society for the advancement of Kinanthropometry.

Nana, A, et al., 2015. Methodology Review: Using Dual-Energy X-Ray Absorptiometry (DXA) for the Assessment of Body Composition in Athletes and Active People. International journal of Sport Nutrition and Exercise metabolism, 25 (2), pp. 198-215.

Hinde, K. et al., 2019. Interpretation of Dual-Energy X-Ray Absorptiometry-Derived Body Composition Change in Athletes: A Review and Recommendations for Best Practice. Journal of Clinical Densitometry: Assessment & Management of Musculoskeletal Health, vol. 21, no., 429-443, 2018

AIS Body composition assessment considerations relating to disordered eating. https://www.ais.gov.au/_data/assets/pdf_file/0011/954704/Disordered-eating-body-composition-considerations.pdf