
PRACTICAL APPLICATION

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Dietary Studies of Athletes: An Interview with Sports Dietitian Bronwen Lundy

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The articles in this issue of *IJSNEM* include a dietary survey conducted by Bronwen Lundy and colleagues of professional Australian Rugby League players. As well as providing information on the nutritional practices of these team sport players, this study includes some insight into the techniques of collecting and interpreting dietary information from elite athletes. In this interview, we provide Bronwen with an opportunity to expand on this theme.

Bronwen, you used 4-day food diaries to collect data on the dietary intakes of professional Rugby League teams on the days surrounding a match. Many sports nutrition practitioners want to gain an understanding of the foods and drinks consumed by the athletes who consult them. What are the advantages and disadvantages of food diaries for collecting such information?

Food diaries are great in some respects as they allow the athletes to record what they have actually eaten in a given period. Athletes often find it hard to “summarize” their eating habits for a diet history or food frequency questionnaire because their eating habits change with the training program and competition schedule. The downside of food diaries is that they take time and commitment from the athletes to be completed well and can’t be quantitatively assessed “on the spot” by the dietitian. When seeing athletes one-on-one I like to use a combination of both methods as they often give a more complete picture of the athlete’s diet. Good food diaries are certainly easier to collect from some athlete groups than others! A poorly kept food diary can provide information that is misleading or easily misinterpreted but is often trusted regardless, since the figures make it appear to be “fact.”

How do you motivate an athlete who has come to see you for nutritional advice to record a food diary? What instructions do you give to the athlete to ensure that the information that they collect is valid and reliable?

It can be difficult! I always try to stress that the better quality of information they can give me the better quality feedback they will get back which is enough motivation for most. In the team sport situation, such as occurred in this study, you can also rely a little on the other staff to be motivators. They were great at reinforcing

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the value of the information, reminding the boys to fill out the diary and hand them back in!

In this study we spoke with each athlete individually as the diaries were handed out and gave them a simple explanation about the type of information we were looking for and how to provide detail about the quantities they consumed. Written instructions and an example diet record page were also provided. The athletes were provided with individual feedback on their diet plus some suggestions on how they could make some improvements—ranging from adjusting their pre-competition meal or eating more vegetables! This individual feedback was part of the motivation for the players to complete the diaries.

Now let's consider the food diary technique in a research context. Are there different considerations to undertaking a dietary survey of a group of athletes using food records? What were the important issues to understand in this group of Rugby League players? What strategies did you use to enhance the quality of the information you collected?

Most researchers who have collected dietary information are aware of the difficulties and limitations that arise. Throw sport and competition into the mix and the difficulties increase, because unless the technique is quick and easy the athletes won't want to do it. Most players will not be willing to weigh every mouthful of food and drink prior to a match as it shifts their focus too far away from the mindset required to compete successfully. This was the primary reason we chose to use food diaries with household measures rather than a weighed food record.

The typical Rugby League player is not as focused on their diet as endurance athletes, for example. Some of the diaries were well-kept, but others came back with information like “meat and vegetables” which doesn't really get us very far! This meant that we needed to seek clarification with the athletes as soon as the diaries were handed back. One factor that made it a little easier was that the athletes had quite similar patterns of eating and there weren't any major cultural differences between the diets.

You used the “Goldberg” method to examine the validity of the dietary information collected in your survey. This technique focuses on the plausibility of the self-reported energy intake data. Can you explain more about this technique and why you thought it was important to include in your study? How does it actually work? Did it provide you with greater insight about the information from the rugby players?

The Goldberg method is a statistical technique that has been used in dietary studies with quite good success as a way to identify over- and under-reporting in dietary records. We wanted to test this technique in an athletic group to see whether it would be helpful and to give greater confidence that our dietary data were valid. In the end, we felt that some of the assumptions in the strategy don't quite work for athletes due to their special situations and lifestyles. The biggest of these were the assumptions that body weight should remain stable if there is energy balance and also that there is not a huge day-to-day variability in food intake. For athletes these assumptions are problematic as athletes may well purposely eat more the day before a match and may eat less on the competition day due to nerves. This would not indicate under- or over-reporting, merely their standard behaviors during

competition. This together with changes in hydration status could affect body weight significantly.

What are some of the factors that lead to under- and over-reporting in food records? Are any of these factors specific to athletes?

Under-reporting has most typically been associated with individuals who are overweight or obese which also applies to physique-focused sports. It was interesting to see that the players who reported lower energy intakes relative to their requirements tended to be the “fatter” athletes—I wouldn’t have expected in this type of athlete group. Under-reporting has also been shown to be more common for individuals who consume large volumes of foods, possibly due to the burden of recording it and increased difficulty estimating the size of larger portions. Over-reporting appears to be less common but it would be interesting to look at whether this occurs in other sports where athletes have to push their weight up a long way above their “natural” set point. It would be great if more research could be done in this area, as validity of dietary reporting in athletic groups needs to be addressed.

What are some of the dietary issues that were identified from your dietary study of the Rugby League players?

The main dietary issues we identified were the poor attention to recovery eating both immediately after the match and the following day. Most of the players were good at following nutrition guidelines in the lead up to the match but then “rewarded” themselves to a degree after the match. This was shown by the much higher fat and alcohol and lower carbohydrate and protein intake on these days!

If you were the dietitian working with any of the teams that participated in your study, what sort of activities might you undertake to address these issues?

I guess the first focus would be education about recovery and its importance, especially for athletes competing on a weekly basis as Rugby League players do. Education on alcohol needs to be provided, since many players don’t have a feel for the negative consequences it can have on recovery and body composition. This really needs to be followed up with some practical help to achieve it—for example, being in the change room after the match to ensure that appropriate foods and drinks are available and encouraged, and that they are consumed before any alcohol appears on the scene! Some of these behaviors are very hard to change as they are so entrenched in the culture of team sports. Working with the club to develop a policy on alcohol may be a more successful approach if it can be achieved.