

## **PROTEIN BAR: a good snack bar?**

### **Key Points**

- Snacking is an important part of an athlete's nutritional strategy
- Any snacks or meals should focus on protein, with the carbohydrate content dependent on the aim for that training period
- A low calorie, low carbohydrate bar containing adequate protein is desirable for busy athletes as a snack (particularly at night or when attempting to reduce body fat)
- The 55g protein bar fulfills a sound nutritional need for athletes since it contains ~20g protein yet only 1.2g of sugar
- The major forms of carbohydrate in the Protein bar are polyols, which are lower in energy content than sugars.
- It is advisable to consider eating 1 bar per day (and no more than 2 per day) since polyols do have laxative properties if eaten in large amounts

A frequently asked question by many athletes in a variety of sports relates to being able to eat something sweet at night (when often there is a need to reduce carbohydrate intake – at least high GI carbs) or between meals (especially when on a carbohydrate-reduction programme to lose body fat). With this in mind either a protein bar or a protein pudding would seem to address the issue. NutritionX have produced Hypnos as a protein-containing pudding (if made with less fluid) and have now incorporated a Protein bar into the product range. The essence for the production of a bar is that it must contain adequate amounts of protein yet contain small amounts of high GI carbohydrate. As a result the bar provides a nutritious snack to be eaten at night (maybe even as a supper) and/or between meals in the day.

If you examine the Science of the product range from NutritionX you will no doubt realise that following strenuous training or competition, there is a need to replenish muscle and liver carbohydrate stores and also to stimulate muscle recovery with adequate amounts of protein. These can be achieved by using MRM or, if the emphasis is on muscle recovery and not carbohydrate restoration after resistance training, Big Whey or BCAA+. Of course we also encourage appropriate eating strategies to achieve a similar goal. However, there are occasions whereby an athlete wishes to have a sweet chewing/eating snack rather than a sweet drink or a nutritious protein-based sweet snack rather than a sugar-filled dessert. The protein bar we have developed fulfills such a need.

Remember that one of our mantras is that each meal or snack should contain some protein i.e. try never to eat a meal or snack which doesn't contain some protein. Consuming carbohydrates in these meals or snacks is dependent on what you wish

to achieve from training and what your overall aim is for that period i.e. high intensity training and so a need for adequate carbohydrate intake or preparation for a match and so a need for adequate carbohydrates or recovery of muscle but attempt to reduce body fat stores and so adequate protein but low carbohydrate intake and so on.

If the emphasis for your periodised training programme is to reduce body fat stores but maintain (or perhaps increase) muscle mass, then focus should be on an overall reduction in carbohydrate intake, particularly high GI carbohydrates (MacLaren & Close, 2009). With this in mind, it is possible to enjoy a sweet treat which is low in high GI carbohydrates and still contains adequate amounts of protein. Having a small fat content is not an issue. The NutritionX protein bar contains approximately 20g of protein and only 1.2g of carbohydrate. Such a composition is sound in terms of protein content and so would help stimulate muscle synthesis (whether this is recovery or help with increase in mass). Although the overall carbohydrate composition is relatively high (14g per bar), most of the carbohydrate is low-calorific because they are what are known as sugar alcohols or polyols. Polyols are carbohydrates but not sugars and are not easily digested or absorbed by the gut. Polyols serve as useful sugar replacers in a wide range of products as part of a sugar free diet. These sugar free foods and products include chewing gums, sweets, ice cream, baked goods and fruit spreads. In addition, they function well in fillings and frostings, canned fruits, beverages, yogurt and tabletop sweeteners. They are also used in toothpastes, mouthwashes and pharmaceutical products such as cough syrups and throat lozenges. In addition to their sweet taste and unique functional properties, polyols offer important health benefits. For example, they are reduced in calories and do not cause sudden increases in blood sugar levels. Importantly, polyols are not readily converted to acids by bacteria in the mouth and, therefore, do not promote tooth decay.

The reason polyols are present in our Protein bar is to sweeten it but also to reduce the overall calorific content – whereas 1g of carbohydrate contains 4kcal, a 1g amount of polyol contains ~2kcal. Eating too much polyols (i.e. by eating too many bars in a day) is not recommended since they can act as a laxative or produce bloating. Our recommendation is that eating 1 or 2 bars in a day (when required) is more than sufficient. Suggestions would include an evening snack after dinner if you become peckish or between lunch and dinner if hungry or even after a training session when travelling home for a meal.

## References

MacLaren, DPM and Close, GL (2009) Glycaemic Index and Glycaemic Load: relevance for athletes in training. *UKSCA Journal*, **13**: 7-12