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	Mark
Application of knowledge	
Critical thinking	
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TOTAL	/24

ASSESSOR'S USE ONLY

Sports Drinks, Positive Influence or Smoke Screen?

1.

'Got a big match coming up? Or perhaps you're just heading to the gym? You may be tempted to reach for a sports drink. After all, we are told proper hydration is crucial and these drinks are "scientifically proven" to help anyone "serious" about their performance.' - Consumer¹

2.

Children's and adolescents' consumption of sports drinks is increasing worldwide, and New Zealand is no exception. When it comes to the consumption of sports drinks New Zealand ranks as the 9th highest country in the world². Does this mean we are a nation full of athletes participating in prolonged vigorous physical activity? No!

3.

Sports drinks and the consumption of them is a well debated topic and rightly so. They are consumed by all ages of people; children, adolescents and adults, for multiple reasons, including sports games, tournaments, sickness or simply because they taste nice. But, is this the intended purpose of sports drinks? Marketed ferociously, advertisements for sports drinks are everywhere we turn. From billboards, to TV screens, to backs of buses, brands such as Powerade and Gatorade are there, being consumed by famous sports teams and elite athletes. You can't help but wonder who these sports drinks are marketed for now. If it's good enough for the All Blacks, surely it's good enough for you and me?

4.

But, are these sports drinks that so many willingly drink, all they are cracked up to be? Sports drinks are designed to replace fluids, carbohydrates and electrolytes.

¹ www.consumer.org.nz/articles/sports-drinks 2016

² <http://www.stuff.co.nz/national/health/65211367/kiwis-have-sweet-tooth-for-sugary-soft-drinks>

Many stakeholders such as athletes are quick to point out the benefits of consuming sports drinks but, are these benefits relevant to all? Although individual brands and products might vary, sports drinks are made up of nutrients such as water, electrolytes (primarily sodium and potassium), and simple carbohydrates. The simple carbohydrates are sugars and typically in sports drinks they use a number of different types including: high fructose corn syrup, fructose, sucrose, sucrose syrup, brown rice syrup, cane juice, and maltodextrin³. Some sports drinks can contain as much as 19 grams of added sugar, 200 milligrams of sodium, and 141 kilojoules per 100 milliliters⁴, although this varies from brand to brand. Sports drinks may quench your thirst but they also deliver a sizable sodium and sugar hit. Amidst a national obesity crisis, is the high consumption of sports drink adding unnecessary kilojoules to diets and contributing to this epidemic, and effecting the overall health and wellbeing of society? We, the parents, teachers, coaches, children and adolescents need to be better informed about sports drinks, which are quickly becoming society's newest addiction⁵.

5.

The Science Behind the Sports Drink.

On a sunny day in Whitby, grade 11 footballers were at a tournament. In my brother's team each of the 11 players had a sports drink slotted into the team's drink rack. These were all individually purchased by their parents. So what even is a sports drink? By my brothers definition 'it's a nice drink that gives you energy.' But

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³ Manore MM, Meyer NL, Thompson J. Sport Nutrition for Health and Performance. 2nd ed. Champaign, IL: Human Kinetics; 2009.

⁴ Committee on Nutrition and the Council on Sports Medicine and Fitness. Sports drinks and energy drinks for children and adolescents: Are they appropriate? Pediatrics. 2011;127(6):1182–1189.

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<http://healthyeatingresearch.org/wp-content/uploads/2013/12/HER-Sports-Drinks-Research-Review-6-2012.pdf>

by 'Healthy Eating Research' the definition of a sports drink is a drink that replaces fluids, carbohydrates and electrolytes which are lost during physical activity. Sports drinks were created by Dr. J. Robert Cade in 1965 in the United States to help the University of Florida football team, The Gators, stay hydrated. The idea of one man became the inspiration of the multimillion-dollar sports beverage industry. But, why is the replacement of fluid so important? And, what about this convinces people to buy these popular commercially manufactured beverages?

7.

Preserving a healthy water balance is an important consideration for individuals during exercise. When we exercise the activity results in increased heat production. In an effort to maintain our optimum internal temperature the body produces sweat. The evaporation of this sweat from the skin allows the body to dissipate this heat and maintain a normal body temperature. The amount of fluid lost as sweat varies according to factors such as the intensity and period of activity and the environmental temperature. Some athletes can lose up to 2 litres of water per hour. However, losses of 1 litre of fluid for each hour of exercise is more likely. If we fail to replace lost fluids dehydration can result. Dehydration at its most severe can result in heat stroke and even death, but, even mild dehydration can have an effect and may reduce or decrease an athlete's physical performance. Some research has suggested that fluid losses greater than 5% of body weight can reduce exercise capacity by as much as 30%⁶. As dehydration increases, there is a mirrored reduction in physical and mental performance. There is an increase in heart rate and body temperature, and an increased perception of how hard the exercise feels⁷. For

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⁶ <http://www.milk.co.uk/page.aspx?intPageID=126>

⁷ <https://www.sportsdietitians.com.au/wp-content/uploads/2015/04/Fluids-in-sport.pdf>

a competitive half marathon runner this could result in a 90 minute race taking 120 minutes instead and, years of training to reach optimum performance lost. This is something no serious athlete would be happy with and may persuade them to consume a sports drink while competing.

Electrolytes such as sodium, and to some extent magnesium and potassium, may also be lost from the body during the sweating process. 'Sports drinks' often contain electrolytes, particularly sodium, therefore, offering sportsmen the ability to replace these minerals. The electrolytes have a number of roles within the body including, having the effect of stimulating water absorption from the small intestine, which is beneficial during exercise. In addition, after exercise, replacing lost sodium is essential for full recovery and rehydration. It seems that sports drinks have become an essential piece of sporting equipment to many people, just like the Nike socks and Under Armour sports apparel, 'empowering athletes everywhere'⁸.

9.

Is the Science Behind Sport's Drinks, Fact or Fiction?

The science behind sports drinks appears at first glance solid. Matt⁹, a part time athlete believes it and swears by drinking sports drinks. By drinking a sports drink prior to swimming he has noted that he can significantly improve his times compared to those he obtains when not drinking sports drinks. For him the benefits are real and he isn't alone. Sports drinks are a real asset to the performance of many athletes in their chosen sport. The drinks are especially rich in simple carbohydrates, which is an efficient source of short bursts of energy therefore providing the athletes with more power and endurance. Sports drinks are also beverages that are

⁸ <https://www.underarmour.com/en-au/>

⁹ Matt Oliver - Ironman and triathlon competitor, as well as a family friend.

formulated specifically to help individuals rehydrate before, during and after prolonged physical activity as they also contain electrolytes (minerals such as chloride, calcium, magnesium, sodium and potassium).

Becky Jones who is a respected sports nutritionist for New Zealand High Performance Sport, backs up Matt's claims and agrees with the earlier mentioned research that indicates that fluid loss can affect exercise ability. She states that, "athletes who participate in prolonged physical activity may definitely benefit from a sports drink". This is because doing a lot of physical activity will cause the athlete to sweat. Sweating causes the body to lose fluid and electrolytes. By drinking a sports drink, it will help to rehydrate the athlete as well as replace these important vitamins and minerals that were previously lost during physical activity. When athletes become dehydrated the amount of body weight lost can be figured out as a percentage. If an athlete who weighed 55 kg lost 2% of their body weight due to dehydration it would cause them to lose 1.1kg, which could negatively affect their performance by 30%. This 30% could be the difference between obtaining a personal best or personal worst. For example, consider a swimmer competing in a 100 metre freestyle race who has a personal best of 1 minute. If they were to lose 2% of their body weight, due to dehydration, it could cause them to finish the race with a time of 1.04 minutes¹⁰. In a race setting, this could be the difference between gaining a gold medal or no medal. These negative effects which dehydration has on an athlete's performance could be easily prevented by the consumption of a sports

10.

¹⁰ Class speaker - Sports dietitian

drink, which would have prevented dehydration. Clearly, sports drinks do actually benefit high performance athletes.

Sports drinks have become a global phenomenon. They are being consumed at Saturday sports games, sports tournaments and even during training sessions. But is this really necessary? And why are we swayed to purchase sports drinks?

Why Do We Buy Sport's Drinks?

11.

If sports drinks were created for athletes, you might think that they would only be available at specialised sporting stores. But this isn't the case. Today, our supermarket shelves are almost bowing under the weight of the myriad of brightly coloured beverages enticing people of all ages to put them in their trolleys. Sports drinks are also readily available in dairies, petrol stations and even some school canteens. Their easy availability beckons all consumers. So, perhaps it is not surprising to discover that these are often the drink of choice for children and adolescents.

12.

Sports drinks are created in bright eye catching colours such as; blues, reds and greens. Just the bright colours alone draw people to them and sway them to put them in their trolleys. The strategic placement of these brightly coloured beverages on the supermarket shelves also have impact on whether they are purchased. My personal research has shown that these are most often placed about two thirds of the way up the shelf - almost at eye level for adults, adolescents and those in middle childhood (8 - 12 years old). This placement is tactical because it is right in the

13.

'bull's-eye zone'¹¹, front and center, right in your sight line. It is the best placement. Believe it or not there is a science behind shelf stacking and the middle location on a shelf is the prime spot. It is where the leading brands and best sellers are placed and some stores even sell this prime stocking location to manufactures for a fee. Our own psychology tells us we have to put these brightly coloured drinks in our trolley.

Sports drinks are sold in attractive sizes and at affordable prices. Larger bottles are aimed at thirsty adults and adolescents. Smaller drinks are now being produced by sports drink companies marketed specifically at smaller consumers, our children. Not only are these children-sized drinks in volume, the bottles are also easier for smaller hands to hold and therefore more attractive to the smallest of consumers. The prices of these drinks are also reasonable. In Countdown the prices of sports drinks such as Powerade, Gatorade, E2, Loaded, Lucazade and G-Force range from about \$2.50 - \$4.00 at full price. However, when they are on sale they can cost as little as \$2 per drink. A favourite promotion is to buy two drinks for a reduced overall price, for instance, two E2's for *just* \$4¹² (compared to a single unit price of \$3.79). These sales will not only encourage individuals to buy sports drinks but also to buy more than they need. This is a psychological tactic used by retailers to boost their sales, but in the process, while individuals might be lead to believe it is a very good deal, they are buying more than they need. Buy buying not one but two sports drinks it will inevitably cause them to drink more than they require. This 'attractive' pricing allows sports drinks to become affordable and therefore, extremely easy for children

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<http://online.notredamecollege.edu/psychology/the-psychology-behind-a-grocery-store%E2%80%99s-layout/>

¹² <http://shop.countdown.co.nz/#url=/Shop/SearchProducts%3Fsearch%3DE2>

and adolescents to purchase with their pocket money. They are also affordable on a budget. But, is their relative cheapness enough of a reason to purchase them?

With such an extensive marketing plan, aesthetic look, clever supermarket shelving and attractive price, it's not surprising to discover that sports drinks sales are increasing. Worldwide more than \$40 billion sales of sports and energy drinks were recorded in 2010 and it is expected to cross \$52 billion in value and 13 billion litres in volume by 2016¹³. New Zealand is not a small player in this market. When it comes to the consumption of sports drinks New Zealand ranks as the 9th highest country in the world.

14.

Who Influences Individuals to Drink Sports Drinks?

15.

Savvy marketing might persuade us to take a sports drink off the supermarket shelf and toss it in our trolley but, it doesn't send us to the supermarket specifically to buy it. Other influences drive that. You don't need to look very hard to spot a beverage company sponsoring a sports star or team, a sporting event, or even the player of the day award at Saturday morning sport. Their advertisements scream at us from the backs of buses, large service station forecourt signs, billboards lining our roads and the sides of bus shelters. But why do these sports drink companies do this? They do it, to influence and encourage us to purchase their products, as well as to help them directly associate their product with sports.

The huge factor behind influencing people to buy and consume sports drink are the sports teams and players who promote them. These athletes promote them because their teams or even themselves personally, are sponsored by these

¹³ <http://www.marketsandmarkets.com/PressReleases/energy-drinks.asp>

companies. Just consider the All Blacks, these sporting heroes are a very large contributor to this issue. The All-Blacks were sponsored by Coca-Cola, who manufacture Powerade for over 20 years, until 2016. Watching the game from the warmth of the lounge, New Zealanders saw our 'Men in Black' refuel on Powerade as they sat on the bench after coming off, or while waiting to go on. So, it's not surprising to discover that Powerade was one of the most purchased sports drinks. Now the All Blacks have begun a new five year partnership with Gatorade, which will see Gatorade as the "official hydration partner" of the All Blacks. I predict that Gatorade sales in New Zealand will soar.

"There is new power behind the All Blacks - POWERADE"

"The world's premier rugby team ... linking up with the world's number one sports drink, Gatorade"

(The wording of these slogans certainly implies sports drinks bring success)

If children and adolescents are worshipping sports heroes, and these sports heroes are associated with sports drinks they are particularly inclined to purchase them. The power of celebrity endorsements, playing on hero worship, should not be underestimated - and manufacturers of sports drinks know it. This was vigorously highlighted in a recent (1 June 2016) news article. A young All Blacks fan arrived at a hospital drinking a Powerade. When asked why, the boy responded "because Richie does," in reference to former All Blacks captain Richie McCaw¹⁴. This is a

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¹⁴

<http://www.stuff.co.nz/national/health/80569221/Call-for-controls-on-marketing-for-sugary-drinks-featuring-childrens-sporting-heroes>

stark reminder of the power that sporting heroes have over the youth of New Zealand. A power that sports drink manufacturers are exploiting.

Sporting heroes influences individuals to also purchase the sports drinks because they use them, therefore they must be good. 'Got a big match coming up? Or perhaps you're just heading to the gym? You may be tempted to reach for a sports drink. After all we are told proper hydration is crucial, and these drinks are "scientifically proven" to help anyone "serious" about their performance¹⁵.'

Sports events can also influence individuals to drink sports drinks. Televised events such as the Olympics, Rugby World Cup or the Football World Cup are all sponsored by the Coca-Cola company who manufacture Powerade. Powerade was all over TV screens during this time and was being consumed by the sports stars, promoting the products and also encouraging and influencing their purchase. In sports commentary and interviews which are televised during these events, there is often bottle of the sponsors brightly coloured sports drinks sitting behind or next to the athletes and commentators. For those watching, their attention is drawn to them in the background. This subconsciously also brings attention to the beverage, therefore promoting it.

Those for, and those against

Stakeholders who are pro sports drinks would be thrilled to realize that New Zealand ranks as the 9th highest country in the world when it comes to the consumption of sports drinks. A stakeholder is a person or group with an interest or concern in an issue. On the sports drink topic, the key stakeholders include children, adolescents,

17.

¹⁵ www.consumer.org.nz/articles/sport-drinks - 2016

parents, sports teams, sports events, supermarkets, manufacturers, sports stars, healthcare professionals and the media. The consumption of sports drinks however, is a hotly debated topic. Because of this, some of the stakeholders take a positive stance while others, take the negative.

There are many stakeholders in the sports drink issue who are 'pro' sports drinks. These stakeholders all impact and influence the sale, promotion and consumption of the very popular beverage in their own ways.

Sports drink manufactures, such as the Coca-Cola company who produce Powerade and, Pepsico who produce Gatorade, obviously play a huge role in the world of sports drinks. Manufacturers want to make a quality product efficiently and at the lowest possible cost and to then on sell it for a good profit. As well as being a stakeholder in their own right, the sports drink manufacturers; investors, employees and their raw material suppliers are also stakeholders who will benefit in the company's successes and so will want the products to succeed.

Supermarkets are also a key pro stakeholder in the sports drink issue. Supermarkets want to sell the product to consumers to make a profit and to do this they must balance the want to make a profit with the need to sell as much of the product as possible. Supermarkets do this by embracing strategies such as "buy two for a discounted price", by placing the drinks in the 'bull's eye zone' on the aisle shelves or in chillers by the checkout queues. These cunning approaches are aimed to make as much money as possible for the supermarkets. This not only benefits the

supermarket but also their employees who will have more job security if the store is financially secure.

Sports teams are also pro stakeholders in the sports drink industry and play a huge role in influencing the consumption of sports drinks. This is because many sports teams are sponsored by the companies which manufacture the drinks. A prominent example of this is The All Blacks who were sponsored by Powerade (Coca-Cola), until 2016 and are now sponsored by Gatorade (Pepsico). The sports drinks companies provide financial backing in exchange for the endorsement of their product. Obviously, the sports teams will do everything they can to encourage their fans to purchase and consume sports drinks so they to will reap benefits.

Sports drink companies also sponsor individual sports stars and celebrities. Just like the teams, the sponsee directly benefits financially from the sports drink manufacturers and is required in return to promote their product. Sports stars and celebrities are influential people especially to young children and adolescents who may consider their role models endorsement to be a sign that these drinks have led to their success and will in turn enable them run, jump, throw etc as well as their idol. Many parents' groups and industry observers have raised concerns about this level of influence.

A final group of pro stakeholders are the consumers who purchase and enjoy sports drinks. They may do this because they believe they will benefit from them, simply like the taste or just need a sugar and energy kick to get them through the remainder of the day. This group is made up of adults, parents and adolescents/children. Parents, as the main providers of a family, have huge

purchasing power as they do the majority of the grocery shopping, choosing what food they will supply their family with. When their children have sports tournaments, a lot feel almost pressured to buy them a sports drink. This is because sports drinks are now seen as a necessity to sports events largely thanks to team and individual endorsements. These recommendations scream at us in the form of advertisements from our TV screens, backs of buses, billboards and magazine ads, bullying and brainwashing us to grab a sports drink for New Zealand's little future sports stars. Children and adolescents are also part of this pro stakeholders group as they are one of the biggest purchasers of sports drinks. This is because these smaller consumers are drawn to sports drinks. This is largely thanks to the inventive advertising of companies and especially celebrity endorsements. However, the way sports drinks look also plays a role. Children are drawn to items which are brightly coloured and there is proof behind this statement. Studies have found that children are attracted to certain characteristics of packaging or product, such as bright colours. This makes them feel as though they must have the beverage, as it looks 'cool' or 'pretty' as well as being eye catching and mesmerizing. The colours of sports drinks even have the potential to create a positive emotional response in children and adolescents. In an article about color preferences in children, Lowenberg (1934) stated that preschool children usually preferred yellow and orange colored food¹⁶. Colour also makes a product stand out on a shelf against all the other products and it can grab a customer's attention even if they are too far away to see or read what the product is¹⁷.

18.

¹⁶ As cited in Walsh, Toma, Tuveson, & Sondhi, 1990, p.646

¹⁷ <http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1124&context=grcsp>

The 'pro' stakeholders may work hard to convince consumers that sports drinks are products which are not just a suggestion but a necessity, like an essential piece of sporting equipment such as shin and mouth guards but, there are still many stakeholders who oppose these beverages.

Parents, may be an 'anti' sports drink stakeholder instead of a pro stakeholder. These stakeholders may actually oppose sports drinks and consequently refuse to purchase them. A common argument of this group is that they want to provide their children with the healthiest and most nutritious food and drink options available. Sports drinks are not one of them. Often they cite the high sugar levels of these beverages as being unhealthy in spite of the other 'nutrients' they contain.

19.

Healthcare professionals care greatly about the consumption of sports drinks and are opposed stakeholders. While this group may note that these products can be beneficial to those athletes who are participating in the prolonged physical activity, they tend instead, to be consumed by those who do not need them. Sports drinks are very high in sugars, which if consumed in excess can lead to a number of health related diseases, which health professionals such as doctors and dentists are trying to avoid. These doctors and dentists see many children on their operating tables due to these beverages. Other stakeholders who do not promote the use of sports drinks include Dieticians, Home Economics teachers, Ministry of Health officials and others who have an understanding of the implications that sports drink consumption can have on people and society at large.

Positive Product or Smoke Screen?

20.

Those stakeholders against sports drink consumption are not just goody-goody health nuts. Their opposition is well founded and multi layered and much of their resistance to sports drinks is because of the detrimental impact these beverages have on our society. One layer of the opposing argument is that for most, water is sufficient. Water has many benefits to the body. Drinking water helps the body maintain the balance of body fluids. It also helps the body contain and control calories and energizes muscles. Water keeps your skin looking good, aids kidney function and helps maintain normal bowel function also.

Sports drinks advocates argue that these products are much more beneficial to athletes than water. This is because sports drinks as well as rehydrating also, reestablish electrolytes which have been lost during physical activity and provide simple carbohydrates, sugars, which can help to give an athlete a short burst of energy. Both these actions are something that water cannot do.

These advocates may also argue that sometimes the consumption of water for athletes can actually be detrimental affect on the body, especially if it is over consumed. This is because overhydration can kill you. A well known publicised example of this is the 28 year old marathon runner who collapsed during the 2002 Boston marathon¹⁸. She collapsed a few short miles from the finish line and died two days later. Her death was attributed to hyponatremia, which is too little sodium in her blood caused by drinking too much fluid before and during the marathon. It has been argued that her death could possibly have been avoided by her consuming a

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¹⁸ <https://newrepublic.com/article/86985/the-boston-marathon-and-drinking-too-much-water>

sports drink(s) instead of water, as it would have replenished the sodium and other electrolytes that were lost during the marathon.

This argument, used by those 'for' sports drinks, is just a sly smoke screen. It might hold weight and merit if only high performance athletes consumed these drinks however, this is, as I have shown, indisputably, not the case. Sports drinks biggest market is just average people and more often than not, children and adolescents. They are consuming these drinks simply as a beverage, not as a product to re-establish electrolytes lost during physical activity. A quick google search provides numerous articles that all state that water should be the drink of choice when you are not participating in physical exercise and should also be the drink of choice when undertaking exercise sessions, unless you are a super-athlete - and let's face it, that group doesn't include the main consumers of sports drinks¹⁹²⁰²¹.

Sport's drink manufacturers are obviously proud of their products. They would all argue that the beverages have health advantages, especially to athletes and, they are tasty too. This is because they are manufactured by using bliss points which helps make the drinks appetising. In the formulation of food products and beverages, the bliss point is the amount of an ingredient such as sugar which optimizes palatability²². The bliss point for sugar is a range within which perception is that there is neither too much nor too little, but just the right amount. These products are

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<http://news.psu.edu/story/141329/2007/05/07/research/probing-question-are-sports-drinks-better-water-athletes>

²⁰ <http://www.mensfitness.com/nutrition/what-to-drink/sports-drinks-vs-water>

²¹

<http://www.fitday.com/fitness-articles/fitness/exercises/drinking-gatorade-vs-drinking-water-during-sports-games.html>

²² <http://lauracipullolc.com/blog/2013/11/26/the-art-of-the-bliss-point/>

therefore more attractive and appealing to customers once they have tried them and therefore cause them to be purchased and consumed more readily. Bliss points would be a main contributor to the over consumption of sports drinks, especially for children and adolescents. The flavour of these products is often fruity which has the added effect tricking us into believing that we are eating fruit, which is seen to be good for you. Those pro sports drinks would argue that this contributes to these drinks being a positive product - 'healthy' because they provide electrolytes, rehydrate, provide energy and taste amazing too. What's wrong with that?

Those anti sports drinks view this as a smoke screen and the drinks themselves as anything but a positive product; and that's putting it lightly. A repugnant product might be a more accurate description - they are unhealthy and the massive quantities that are being consumed, are having huge detrimental effects on our health and the well-being of society at large. And that's not an understatement.

23.

It's the ingredients of these drinks that make those opposed to them, so anti. Those in favour may argue that the added electrolytes or vitamins included in these drinks are a plus. This is a smoke screen however, as the electrolytes etc that may need to be replenished after exercise, can actually be restored from merely eating a healthy, everyday diet. There is little benefit to consuming these electrolytes in this form for the average consumer and any small benefit is totally outweighed by the other ingredients, most notably sugar and sodium.

Sugar is a simple carbohydrate which gives the body shorts bursts of energy. While advocates might say this is an attribute of sports drinks this is a red herring as sugar in large amounts has many detrimental effects on the body too and sports drinks

certainly have a lot of sugar (some as much as 19 grams of added sugar per 100 milliliters²³). Added sugar (sometimes referred to as 'free sugar') refers to sugar added to foods or beverages by the manufacturer as well as sugars that may be naturally present in the product. Sugars add extra calories but no nutrients. The US Government's Scientific Advisory Committee on Nutrition (SACN) gives guidance on the consumption of free sugars. They recommend that our daily intake should be less than 5% of our total energy intake. So what does that really mean? Children aged 4 to 6 should have no more than 19g or 5 teaspoons of free sugars per day. Children aged 7 to 10 should have no more than 24g or 6 teaspoons of free sugars per day. Children aged 11 years and upwards, as well as adults, should have no more than 30g or 7 teaspoons of free sugar per day. **Shockingly, just one 800ml sports drink with 19g of added sugar per 100 ml provides a horrific 152g of sugar which is 122g over their recommended daily sugar intake for people aged 11 years and over!**

24.

So, what's so bad about sugar anyway? One of the implications of over consuming sugar is that it can lead to tooth decay. Bacteria in our mouths feed on the sugars in our diet and forms plaque, which is a sticky bacterial slime that coats the teeth. Plaque produces acid as a by-product which erodes the protective outer layer of enamel and can lead to a cavity or 'hole' in the tooth. This 'hole' means bacteria and acid can then gain access to the sensitive dentine of the tooth and the pulp below, which contains nerves. The longer it is left untreated, the more severe the decay becomes. At best, tooth decay be unsightly but it can also cause pain, infection and

²³ Committee on Nutrition and the Council on Sports Medicine and Fitness. Sports drinks and energy drinks for children and adolescents: Are they appropriate? Pediatrics. 2011;127(6):1182–1189.

– in rare cases – death. Unfortunately, New Zealand's dental health, especially of young children continues to be among the worst in the developed world²⁴ and it's not getting any better. Between 2009 and 2015 there was a 17 per cent increase in the average number of decayed, extracted, and filled teeth in those children from 3.6 to 4.2²⁵. Nelson Marlborough DHB principal dental officer, Dr Rob Beaglehole has stated that sugary drinks (such as Powerade) are the number one source of sugar in the diets of children in New Zealand and hugely contribute to health problems such as tooth decay²⁶. No wonder there is a strong group opposing sports drinks. The manufacturers of these beverages must realize that their products are contributing to the poor oral health of New Zealanders and most notably our children and adolescents.

A further reason many are anti sports drinks is that the high sugar levels they contain, as well as contributing to dental decay, can lead to unhealthy weight gain and ultimately obesity. Obesity is a condition where a person has accumulated so much body fat that it will have a negative effect on their health causing high blood pressure and type 2 diabetes. Obesity is one of the most pervasive, chronic diseases of our time. So how does sugar lead to obesity? Sugar causes insulin resistance and raises insulin levels in the body, which increases the deposition of fat in the fat cells. It also causes resistance to a hormone called leptin, which makes the brain blind to the fact that the fat cells are full of fat. This leads to increased food intake and decreased fat burning. Sugar also does not make you feel full after meals

²⁴ http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10710408

²⁵

<http://www.stuff.co.nz/national/health/78269090/rotten-to-the-core--our-childrens-dental-decay-problem>

²⁶

<http://www.stuff.co.nz/national/health/80569221/Call-for-controls-on-marketing-for-sugary-drinks-featuring-childrens-sporting-heroes>

as it does not lower levels of the hunger hormone ghrelin and it doesn't reduce blood flow in the centers of the brain that control appetite. This can motivate you to eat much more than is needed. In conjunction with all this sugar is addictive which means you crave it and actively consume more of it. As sports drinks are highly consumed and full of sugar clearly, they contribute to our increasingly large waistlines.

Sodium is an electrolyte which is added to sports drinks. Sodium is required by the body as it plays a role in keeping the fluids and electrolytes in our body balanced. The advocates of sports drink claim that the added sodium in these beverages is an advantage because sodium is lost through sweating and is needed to be replaced. However, as the majority of sport drink consumers do not sweat in large amounts, replacing this electrolyte isn't necessary. In fact this is a smokescreen because if the sodium doesn't need to be replaced the consumer is instead loading up on sodium and too much sodium is in fact detrimental to our health. Sports drinks can have as much as 200 milligrams of added sodium per 100 milliliters²⁷ (which can be up to 1600 milligrams in a 800ml bottle). Added sodium refers to the sodium which is added to foods or beverages by manufactures. The New Zealand Nutrition Foundation provide guideline for the consumption of sodium the an average person should consume daily. They recommend that both adult men and women, between the ages of 19 - 70+, consume 920 - 2300 milligrams of sodium/day²⁸. The consumption of a single sports drink can take a person very close to their recommended daily intake. If additional sodium is ingested by eating smoked, cured,

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²⁷ Committee on Nutrition and the Council on Sports Medicine and Fitness. Sports drinks and energy drinks for children and adolescents: Are they appropriate? Pediatrics. 2011;127(6):1182–1189.

²⁸ <http://www.nutritionfoundation.org.nz/nutrition-facts/minerals/sodium>

salted or canned meat, fish or poultry (eg bacon or tuna), burritos, pizza, canned sauces or salted nuts etc, the consumer could become sodium toxic. Increased amounts of sodium in the body can also cause a number of health problems such as high blood pressure. Our blood pressure is the pressure at which your heart pumps blood around your body. A blood pressure reading is made up of two different measurements. These are when your heart is pumping and the pressure when it's resting. High blood pressure can cause your blood vessels to harden, narrow, and increase your chances of having a stroke or a heart attack. High blood pressure can also lead to a number of other health related diseases such as strokes, heart attack, heart failure and kidney failure. Drinking sports drinks can cause these unwanted and dangerous health conditions.

The huge consumption of sports drinks brings with it a burden which is having a crushing effect on our society. Without a doubt, these brightly coloured beverages are contributing to dental decay, obesity, high blood pressure, type 2 diabetes, strokes, heart attacks, heart failure and kidney failure. A person's ill health, because of these drinks, can affect their households income due to time off work and the costs associated with illness, such as doctor's visits. This directly affects the long term health and well being of their families also, for instance, children may have to miss out of activities or even essentials like warm clothes and shoes as these can no longer be afforded. This same ill health can lead to their employers struggling to make a profit due to lost productivity caused by staff absences. As one business struggles it can have a domino affect on other businesses that rely on them or work with them. It could also result in a reduced tax base for the government as businesses struggle or even fail. This ill health also affects the demand for

healthcare and the total cost of delivering the required services which impacts on the individuals needing the care and the government, who has to ensure there is adequate care. This small coloured sports drink could be the straw that breaks the camel's back²⁹.

Halting the Sports Drink Epidemic

27.

New Zealand is on the world leaderboard when it comes to the amount of sports drinks consumed, ranking 9th. But, this achievement is not something to be proud of. The drinking of these sugar-laden beverages is having a huge detrimental effect on our society and it is essential that we do something to limit the damage that these products are causing. Ultimately, to do this, we need to drastically reduce consumption.

One step we could implement to do this, is to regulate the way sports drink companies can use their sponsorship for advertising. This could be achieved by putting some tight rules and regulations around the sponsorship deals. For example, we could ban the use of pictures of individuals/teams in advertisements directly holding or drinking the sports drinks and instead only permit the drink's name to be included with the individual/team on the advertisement. Another regulation could be only permitting sport's drinks to be advertised on TV or radio after 8.30pm so younger viewers aren't as likely to be exposed the advertisement. By regulating sponsorship it will help to decrease the influence sporting stars have in promoting these beverages, which would lead to consumers being less inclined to purchase them.

²⁹ <http://www.who.int/choice/economicburden/en/>

Another way we could reduce sport's drink consumption is to only allow these products to be sold in specialized sporting goods stores. Here the main customers would be those who the product was originally manufactured for. Alternatively, we could move these drinks to a special section in the supermarket similar to where alcohol is kept and endeavour to restrict access.

A more drastic method to reduce consumption of these drinks could be to introduce a packaging regime, similar to what is used for cigarettes. This would require the drinks to be packaged in plain packaging which could include pictorial health warnings of some of the health related diseases, e.g. dental decay, that the consumption of these drinks can cause. This would certainly make these beverages less attractive to purchase.

Another way to help halt sports drink consumption is to introduce a tax on sports drinks in an attempt that a significant price increase would reduce the amount of people who purchase these products. This could not only save lives but also generate revenue for health programmes to help combat the illnesses these drinks cause and be invested in programmes to improve population health³⁰. Researchers estimate a 20% tax on all fizzy drinks would reduce energy consumption by 0.2% or 20kJ a day and help postpone and potentially stop about 67 deaths from cardiovascular disease, diabetes, heart disease and diet-related cancers a year. There are a number of countries which have already implemented taxes on sugar-sweetened beverages such as sports drinks and research published recently in the British Medical Journal states that a 20% sales tax on sugar-sweetened drinks could reduce the prevalence of obesity in the UK by 1.3% and reduce the prevalence

³⁰ <http://www.stuff.co.nz/world/europe/77970735/uk-introduces-sugar-tax-on-soft-drinks.html>

of overweight by a further 0.9%. A health impact assessment of a proposed 10% tax on sugar-sweetened beverages in Ireland found it could reduce prevalence of obesity by 1.3% and prevalence of overweight by a further 0.7%. If a tax put on soft drinks overseas has helped to reduce their obesity rate, we can only imagine what it would do to ours.

28.

All these strategies could help reduce the consumption of sport's drinks. John Key may cry out that the government doesn't want to become a nanny state, interfering with personal drink choice but, reducing consumption is vital because these beverages are having an undisputed detrimental effect on society. They are hurting individuals, families and communities and they are contributing to a huge number of health issues from dental decay to obesity and costing our country millions of dollars. We have to do something and we have to do something TODAY!

29.

Dispersing the Smokescreen

We are not a nation full of athletes participating in prolonged vigorous physical activity and yet New Zealanders appear to be addicted to sports drinks consuming them in enormous quantities. Sports drinks manufacturers and stakeholders who benefit from sports drink sales are quick to point out the positive aspects of this product. And there are a few. However, these are only beneficial when the product is being used by those it was originally intended for - high performance athletes. Today these products are actively marketed for the general public and children and adolescents are their most avid consumers. A smokescreen has been created and we must disperse it. These beverages are dangerous - for individuals and society. Sports drinks are riddled with sugar and

30.

sodium, both of which are causing and contributing to a huge number of health related diseases. The consumption of these drinks is costing our country greatly, both in dollars and in lives not being lived to their full potential. We have to do something about this because if we don't we only have ourselves to blame.

31.

Scholarship exemplar for Physical Education 93501 2016

Overall Judgement

This report has been graded to be at Scholarship level.

The candidate has constructed a logically structured report, communicated clearly, coherently, and convincingly, with relevant referenced evidence. The selection of topic is clever and provides a platform to integrate a broad range of knowledge drawing upon Physical Education-related, Health-related, and Home Economics-related knowledge, theories, and concepts. The candidate adopts a format that includes research, presents a range of ideas, challenges assumptions, and makes substantiated conclusions. A critical perspective is presented throughout the report, and the candidate consistently applies and interconnects appropriate issues, theories, practices, and learning experience. The candidate applies a theoretical basis to the report, and questions and challenges issues, theories, and practices, with insight and perception. HPE underlying concepts are well understood and accurately applied.

Annotations

The candidate:

1. Gives a clear title that gives the reader clarity of report focus.
2. Utilises an interesting and relevant quote at the start that captures the attention of the reader and sets the scene for the report.
3. Introduces their argument early in the opening paragraph, with respect to the opening quote.
4. Uses critical questions throughout the opening section; this demonstrates a strong critical perspective, as they begin to question and challenge the selected topic.
5. Offers a concise review of the background scene and knowledge behind the topic (not overly excessive). The candidate has resisted the temptation to be overly account based.
6. Integrates their own experience through the use of an original and authentic narrative.
7. Uses critical questions to transition into a new section.
8. Frames up an initial viewpoint, similar to a “straw man” argument. These views are supported by research and statistics.
9. Links the discussion back to the focus of the report and is a useful allusion to other sport-related marketing practices.
10. Effectively uses a direct quote by explaining the logic behind the quote and then developing discussion based on the sources perspective.
11. Uses sub-headings provides structure to the report.
12. Develops a divergent view starts to challenge the issues around sports drinks.
13. Uses primary empirical evidence (personal observation and research) to further support the discussion and substantiate judgments.
14. Broadens the discussion to include relevant sociocultural factors (the economic determinant of health and practices links to globalisation).

15. Examines how sociocultural factors / determinants of health influence people in relation to the consumption of sports drinks.
16. Demonstrates an understanding of how individuals' behaviours and values are influenced by societal factors. (This is reflective of the HPE underlying concept the socioecological perspective.)
17. Explores which groups and businesses have vested interests in the status quo, and as a result, acknowledges the power relationships that are present and whose interests are really being served. The candidate could have gone deeper into the "for" and "against" groups' / stakeholders' attitudes, values and beliefs, perhaps linking to ethical concepts.
18. Gives a strong example of how individuals' actions and values are subjected to external influences.
19. Examines groups with vested interests who are anti-sports drinks to balance the argument.
20. Format issue. This type of format issue is common when the candidate prints directly from Google Docs. It is recommended that the candidate downloads their report (for example, into Word) for a final edit and format check, before submission.
21. Arguments are balanced with alternative views.
22. Offers a strong critical perspective. Argument is attacked with clear logic. In effect, a "straw man" argument has been created, where one side was presented with the purpose to enable the candidate to challenge it through a strong critical evaluation.
23. Makes an explicit link to the HPE underlying concept of hauora.
24. Brings the sugar debate, which is a broad and complex topic, to the focus of the argument and the report.
25. Rebuts pro-sports drink arguments with logical reasoning and justification based on examples and evidence.
26. Examines wider societal implications, in relation to the topic, with insight and perception.
27. Explicitly addresses future implications and makes divergent suggestions around future directions to address the issue. These clearly link to aspects of the Ottawa Charter, reflecting an understanding of the HPE underlying concept of health promotion (most markedly building healthy public policy and creating supportive environments).
28. Makes a judgement with a strong critical perspective that ties together the candidate's discussion around strategies and interventions.
29. Refers to John Key, and not wanting to be a nanny state, which is a link to neoliberalism – a high-end concept.
30. Presents a balanced and reasoned position.
31. Gives a concise conclusion that articulates key findings of the report, and concludes with key messages that have surfaced through the candidate's report.