

**March 2020**

## **FOOD FOR THOUGHT**

### **PLANT WATERS MAKING A SPLASH**

All that our forebears drank for thousands and thousands of years was plain water. It's all that they had available (apart from breast milk as infants). It's also absolutely essential to life. Our bodies need it to transport nutrients to our organs and oxygen to our cells; to remove waste; to protect our organs; and to regulate our body temperature.

Plain water faces stiff competition these days, however. The proportion of tap water in our diet has diminished as we have shifted to drinking other beverages from tea and coffee to soft drinks and mineral waters.

The latest commercial beverage trend is "plant waters," once part of traditional diets in northern Europe, Asia, the Pacific Islands and North America. Now endorsed by celebrities and sports people, they have hit the hype home run. Take the health claims made about them with a large pinch of salt (the evidence is excessively thin on the ground) and enjoy them in moderation if you wish. Remember, they are a pricy alternative to "Chateau Tap," and they come with calories. They will also affect blood glucose levels.



**BIRCH WATER** Drunk straight from the tree, birch sap was a traditional springtime tonic in northern Europe renowned for its strengthening and curative powers. Over two hundred years ago, Baron Pierre-François Percy, army surgeon and inspector general to Napoleon, extolled its benefits making health claims that would have modern marketers blushing to their boots. "Throughout the whole of northern Europe . . . birch water is the hope, the blessing, and the panacea of rich and poor, master and peasant alike . . . It almost unfailingly cures skin conditions such as pimples, scurf, acne, etc., it is an invaluable remedy for rheumatic diseases, the after-effects of gout, bladder obstructions, and countless chronic ills against which medical science is so prone to fail."

These days, it's not just a springtime tonic. It is bottled and sold in Japan, Korea, Scandinavia, and Eastern Europe as a refreshing beverage. Leading brands include Denmark's Sealand Birk and Finland's Nordic Koivu.

What's in it? According to the manufacturer, a 250ml (9fl oz) serving of Sealand Birk provides 210kJ (50 calories), 12.5g available carbohydrate (12.5g natural sugars) and 4mg sodium.

**COCONUT WATER** Tropical coconut palms (*Cocos nucifera*) flourish on shorelines in a worldwide band 25 degrees north and 25 degrees south of the equator. It's considered the tree of life in many cultures, and is certainly a contender for gold when it comes to "world's most useful plant". With each tree yielding thousands of coconuts over a 60–80-year lifespan, it provides, in one neat package, a high-calorie food, potable water, fibre that can be spun into rope, and a hard shell that can be turned into charcoal. What's more it makes a handy flotation device if you need it. And it's not a nut, it is a drupe or stone fruit.

The clear liquid inside the coconut has long been a popular drink in the tropics. There's a lot of hype about its benefits, but little research to support the claims.

What's in it? The Nudie brand, the only one tested, has a GI value of 55. According to the manufacturer, a 250ml (9fl oz) serving provides 198kJ (47 calories), 11g available carbohydrate (including 8g natural sugars) and 57mg sodium. The glycemic load is 6.

**MAPLE WATER** Maple water is a refreshing drink straight from the tree when the sap is running in maple country, and not just in the United States and Canada. In South Korea, drinking maple sap (*gorosoe*) is a springtime ritual with festivals and sap-drinking contests.

Until recently, maple water had a very limited season, as it could only be harvested during a narrow, six-week window. Now "the sap is frozen to maintain its healthful benefits and maximize its fresh shelf life," says the manufacturer of KiKi Maple Sweet Water®. "At a local bottling plant, a hot fill process, with the liquid heated to just below 96 degrees Celsius, ensures that the drink remains below pasteurization temperature to preserve its purity, highlight the flavour and maintain healthful benefits. The product is then shipped, stored, and served chilled."

What's in it? A 240ml (9fl oz) serving of KiKi provides 115kJ (48 calories) and 12g available carbohydrate (11g natural sugars (sucrose, glucose, and fructose)). There are claims that it is low GI, but no published data. We assume the claim is based on the GI for maple syrup (GI 54).

**Read more:**

- [Coconut](#)
- [Coconut water. Is it what it is cracked up to be?](#)

**WHAT'S NEW?**

**COW'S MILK AS A POST-EXERCISE RECOVERY DRINK: IMPLICATIONS FOR PERFORMANCE AND HEALTH**

Managing recovery after exercise depends on the nature of the exercise, the time between exercise sessions and your goals. From a nutritional perspective, your main considerations are:

- Optimising your muscle protein turnover
- Glycogen resynthesis
- Rehydration
- Managing your muscle soreness

- Managing energy balance.

Milk (that's plain milk not flavoured milk) is uniquely suitable because it is approximately isotonic, and provides high quality protein, carbohydrate, water and micronutrients (particularly sodium).



Research has shown that drinking milk post-exercise can be beneficial for acute recovery and for chronic training adaptation. It:

- Augments post-exercise muscle protein synthesis and rehydration
- Can contribute to post-exercise glycogen resynthesis,
- Attenuates post-exercise muscle soreness/function losses.

Milk is at least comparable and often out performs most commercially available recovery drinks, but is a fraction of the cost.

Drinking milk after exercising has also been shown to reduce subsequent energy intake and thus may lead to more favourable body composition changes with exercise training.

#### **Read more**

- [Cow's Milk as a Post-Exercise Recovery Drink: Implications for Performance and Health](#)

## **PERSPECTIVES: DR ALAN BARCLAY.**

### **WATER, THIRST AND HYDRATION**

Water is an essential nutrient – in fact, more important to life than all other nutrients. The average healthy adult can survive just 2–5 days without water, but several months without food. Water is essential to life because it:

- Helps with the regulation of body temperature, as the evaporation of sweat from the skin removes excess heat from the body
- Acts as a lubricant and helps cushion joints, the spinal cord, etc
- Helps maintain the structure of certain proteins and glycogen
- Carries nutrients and waste products throughout the body
- Acts as a solvent for vitamins, minerals, amino acids, sugars, etc so that they can participate in metabolic activities
- Maintains blood volume.



**THIRST** The average adult body contains 35–45 litres of water, which makes up around 60% of total body weight. Two thirds of it is located within our cells (75% in lean tissue and 25% in fat tissue) and is known as intra-cellular fluid, and the rest is in our blood, body cavities and between cells in organs and tissues, and is consequently known as extra-cellular fluid.

Extra-cellular fluid contains a variety of minerals including sodium, potassium, calcium and magnesium which are paired with chloride and/or bicarbonate to form salts. The kidneys adjust the excretion of water to keep the concentration of these salts in the extra-cellular fluids at a constant concentration. This in turn helps balance out the concentration of fluids within cells (intra-cellular fluid).

When the concentration of the salts in the extra-cellular fluids increases due to dehydration, a specialised part of our brain called the hypothalamus:

- Sends a message to another part of the brain that causes the sensation of thirst
- Signals the pituitary gland to release a hormone called vasopressin (or antidiuretic hormone (ADH) depending on which country you live in), into the blood that signals the kidneys to increase the reabsorption of water and return it to the blood.

The kidneys also sense if blood pressure is too low and release a hormone called renin, that through a complex series of events, causes the kidneys to reabsorb more sodium. This in turn helps the kidneys retain more water.

Finally, there are also neural pathways from sensors in the heart and major blood vessels

that stimulate thirst and the release of vasopressin/ADH when the volume of blood shrinks.

These complex mechanisms enable the body to maintain optimal hydration throughout each day, under a broad range of environmental conditions, even when exercising. The fact that most people maintain much the same body weight on a day-to-day basis indicates that total body water is kept constant, with gains carefully balanced by losses.

**KEEPING HYDRATED** Most people know that they should aim to drink at least 6 glasses of water each day. Here's how that advice came about. For optimal health and well-being, we need between 35–45 ml of fluid for every kilogram of our body weight each day, depending on gender, level of physical activity, body composition and of course the weather.

As an example, an average woman weighing 71kg (157 pounds) needs between 2.5–3.2 litres of fluid each day, and an average man weighing 86kg (190 pounds) between 3.0–3.9 litres.

Not all fluids need to come from beverages, however, as believe it or not, around 750ml (around 3 cups) comes from food and a further 250ml from the metabolism of food.

So, on average, women should aim to drink 1.5–2.2 litres (6–9 cups) each day and men 2.0–2.9 litres (8–12 cups) each day.

Don't overdo it. Water intoxication is rare but can occur if you consume 10–20 litres of fluids within a few hours. Confusion, convulsions and even death can occur due to dangerously low sodium levels in the blood that affects cell functioning.

While water is an essential nutrient, like most things, too much can kill. The dose makes the poison.

**Read more:**

- [Thirst](#)
- [Water, electrolytes & acid-base balance](#)



Alan Barclay PhD is a consultant [dietitian](#) and chef. He is author of *Reversing Diabetes* (Murdoch Books), and co-author of 30-plus scientific publications, *The Good Carbs Cookbook* (Murdoch Books), *Managing Type 2 Diabetes* (Hachette Australia) and *The Ultimate Guide to Sugars and Sweeteners* (The Experiment Publishing). Follow him on [Twitter](#) or check out his [website](#).

## DIABETES CARE

### WHAT TO DRINK TO QUENCH YOUR THIRST?

Plain water is best to quench your thirst: it is the most refreshing drink, provides zero kilojoules plus a few minerals, and has no effect on your blood glucose levels. It doesn't have any taste, although the minerals that are sometimes found in water naturally, or that are added (e.g., fluoride), can give it an unusual flavour. If that's an issue for you, try a water purifier and/or adding some ice and a slice or two of lemon or lime.

**MINERAL WATER** Depending on the source, mineral water contains relatively small amounts of sodium, potassium, magnesium and calcium and is a suitable alternative to plain water for people with diabetes and those at risk.

**LOW JOULE SOFT DRINKS** These are OK to drink occasionally, but not on a daily basis. Carbonated beverages have a low pH (they are acidic), and in theory, frequent consumption may increase the risk of developing tooth decay. However, they have no effect on blood glucose levels, and provide very few kilojoules (calories).

**FRUIT JUICES AND FRUIT DRINKS** Enjoy occasionally, but not on a daily basis. They are a source of kilojoules (calories) and carbohydrate. On average, they provide 400kJ per 250ml serve (1 cup), and are an important source of vitamin C providing on average 113mg per cup), which is more than twice the RDI (45mg per day). Most fruit juice contains a small amount of dietary fibre. As they have a low pH and are a source of fermentable carbohydrate for cariogenic bacteria, frequent consumption may increase the risk of developing tooth decay.



Fruit juices and drinks raise blood glucose levels in people with diabetes. On average, they provide 22g of carbohydrate per cup (250ml). All fruit juices made from low GI fruit and most fruit drinks have a low glycemic index, however a 250ml serve of most has a medium glycemic load.

**What about hypos?** Because gastric emptying, intestinal motility and absorption rates increase when a person is having a hypo, fruit juices and drinks are suitable for treating the condition despite the fact that most varieties have a low GI.

**SUGAR SWEETENED SOFT DRINKS** Save these for special occasions. Like fruit juices and drinks, sugar sweetened soft drinks have a low pH and are a source of fermentable carbohydrate for cariogenic bacteria, and consumption is positively associated with increased risk of tooth decay.

On average, a 250ml glass (1 cup) of sugar sweetened soft drink provides around 440 kJ, 27g available carbohydrate (that's about 2 exchanges), and most have a medium glycemic index, and a medium-high glycemic load, and consequently they will raise blood glucose levels in people with diabetes.

**What about hypos?** Like fruit juices and drinks, sugar sweetened soft drinks are suitable for treating hypoglycaemia despite the fact that most varieties have a medium glycemic index, because gastric emptying, intestinal motility and absorption rates increase when a person is having a hypo.

**Read more:**

- [Reversing Diabetes, Dr Alan Barclay \(Murdoch Books\)](#)



## **YOUR GI SHOPPING GUIDE**

### **MELONS, MANGOES, PAPAYA AND PINEAPPLE**

These juicy fruits are great thirst quenchers that also provide us with dietary fibre and essential vitamins and minerals.



**For people with diabetes** – Many people count grams of carbohydrate or use 15g Carbohydrate Exchange or 10g Portions to help match their insulin or blood glucose lowering medication to their requirements. We have included both. A 15g Exchange includes food with 12–18g carbohydrate and a 10g Portion 7.6–12.5g of carbohydrate.

## Watermelon

GI 78

Serving: 1 slice (160g/5¾oz)

Energy Kilojoules	Energy Calories	Carbs – Available	Diabetes Exchange	Diabetes Portion	Glycemic Load (GL)
160	38	8g	0.5	1	6

## Rockmelon (cantaloupe)

GI 68

Serving: 1 cup diced (190g/6oz)

Energy Kilojoules	Energy Calories	Carbs – Available	Diabetes Exchange	Diabetes Portion	Glycemic Load (GL)
190	45	8g	0.5	1	7

## Mango

GI 51

Serving: 1 cheek (90g/3¼oz)

Energy Kilojoules	Energy Calories	Carbs – Available	Diabetes Exchange	Diabetes Portion	Glycemic Load (GL)
220	53	11g	0.75	1	6

## Papaya

GI 56

Serving: 1 slice (70g/2½oz)

Energy Kilojoules	Energy Calories	Carbs – Available	Diabetes Exchange	Diabetes Portion	Glycemic Load (GL)
100	24	5g	0.3	0.5	3

## Pineapple

GI 59

Serving: 2 thin slices (110g/3¾oz)

Energy Kilojoules	Energy Calories	Carbs – Available	Diabetes Exchange	Diabetes Portion	Glycemic Load (GL)
195	47	9g	0.5	1	5

Read more:

- [www.glycemicindex.com](http://www.glycemicindex.com)

## GOOD CARBS FOOD FACTS

### NOODLES

Noodles have long been a staple food in Asia and in parts of Europe (Poland and Hungary for example have a wide variety of noodles both egg and flour/egg flour potatoes noodles served with roasts, stews, sauces, soups).



These days, their meal-in-minutes value has boosted their popularity – serving noodles with fish, chicken, tofu or lean meat and plenty of vegetables gives you a speedy meal with a healthy balance of carbs, fats and proteins plus some fibre and essential vitamins and minerals.

As it's all too easy to slurp, gulp, twirl and overeat noodles, keep those portion sizes moderate. While some noodles are a lower GI choice, eating a huge amount will have a marked effect on your blood glucose.

<b>PORTION – about ½ cup cooked noodles</b>	<b>GI</b>	<b>Available carbs (grams)</b>	<b>GL</b>
Buckwheat noodles (75g, cooked)	59	18g	11
Hokkien noodles (Fantastic Fresh) (75g, cooked)	58	27g	16
Instant 2-minutes noodles (Maggi) (90g, cooked)	67	13g	9
Mung bean noodles (Lungkow) (90g, cooked)	39	23g	9
Rice stick noodles (85g, cooked)	40	20g	8
Soba noodles, instant, served in soup (90g cooked)	46	25g	12
Udon noodles, plain (90g cooked)	62	23g	14

To cook noodles, follow the instructions on the packet as times vary depending on types and thickness. Some only need swirling under running warm water to separate, or soaking in hot (but not boiling) water to soften before you serve them or add to stir-fries. Others need to be boiled. Like pasta, they are usually best just tender, almost al dente.

#### **RICE STICK NOODLES**

<b>Good Carbs Food Facts</b>	
★ ★ ★ ★ ½	
<b>Glycemic index: 40</b>	
<b>Gluten free</b>	
<b>Serving size</b> – Half a cup (85g) cooked rice stick noodles	
Kilojoules	425

Calories	100
Protein	2g
Fats – Total	0.2g
Includes:	
–Saturated fat	0.06g
–Polyunsaturated fat	0.06g
–Mono-unsaturated	0.08g
Saturated : unsaturated fat ratio	0.4
Carbohydrates – Total	23g
<i>Available</i>	
Includes:	
–Natural sugars	0g
–Natural starches	22g
–Added sugars	0g
–Added starches	0g
<i>Unavailable</i>	1g
Includes:	
–Dietary fibre	1g
Sodium	3mg
Potassium	6mg
Glycemic load	9
Diabetes exchange	1.5
Ingredients: Rice stick noodles, water	

**Read More:**

- [Know Your Noodle](#)

## THE GOOD CARBS KITCHEN

### CHICKEN POACHED IN FRAGRANT ASIAN BROTH

0:15 Prep • 0:25 Cook • 4 Servings • Light & Spicy Meal • Flavoursome Stock • Gluten Free



#### INGREDIENTS

2 x 200g (7oz) skinless chicken breast fillets  
50g (2in) piece fresh ginger, sliced, plus 2 tablespoons shredded ginger to serve  
50g (2in) galangal, sliced  
4 spring onions, sliced, plus extra slices to serve  
4 kaffir lime leaves, torn  
1 lemongrass stem, bruised  
1 star anise  
1 long red chilli, halved lengthwise  
½ cinnamon stick  
2 garlic cloves  
100g (3½oz) rice stick noodles  
115g (4oz) baby corn, halved lengthwise  
200g (7oz) snake beans, trimmed  
100g (3½oz) snow peas (mangetout), thinly sliced  
Vietnamese mint leaves to serve  
Lime cheeks, to serve

#### METHOD

Pour 4 cups of water into a large saucepan and add the chicken, sliced ginger, galangal slices, spring onions, lime leaves, lemongrass, star anise, chilli, cinnamon and garlic. Place over low heat, cover and simmer for 15–20 minutes or until the chicken is cooked through.

Meanwhile, put the noodles in a heatproof bowl and cover with boiling water. Leave to soak for 5 minutes or until softened, then drain.

Use a slotted spoon to lift the chicken from the broth. Strain the broth and return to the pan. Cut the chicken into thick slices.

Add the baby corn and snake beans to the broth and cook for 2 minutes, then add the snow peas. Cook a further minute until the vegetables are just tender (but still have bite).

Divide the noodles, chicken, corn, beans and snow peas among 4 bowls and ladle over the broth. Top with extra ginger and spring onions and with the Vietnamese mint leaves and serve with the lime cheeks.

## NUTRITION

*Per serve* 1245kJ/296 calories; 27g protein; 6g fat (includes 2g saturated fat; saturated : unsaturated fat ratio 0.5); 31g available carbs (includes 3g sugars and 28g starch); 6g fibre; 160mg sodium; 750mg potassium; sodium : potassium ratio 0.21

## RECIPE

[Reversing Diabetes, Dr Alan Barclay \(Murdoch Books\)](#)



## SHITAKE, GINGER AND TOFU HOKKIEN NOODLES



0:15 Prep (+ 4 hours marinating) • 0:15 Cook • 4 Servings • Main Meal • Gluten Free

## INGREDIENTS

2 tablespoon low-sodium soy sauce  
2 tablespoon Chinese rice wine  
1 tablespoon Chinese black vinegar  
1 garlic clove, crushed  
2 teaspoon finely grated ginger  
375g (13oz) packet firm tofu, cut into 2cm (¾in) cubes  
450g (1lb) packet fresh hokkien noodles

1 tablespoon olive oil  
2.5cm (1in) piece ginger, cut into very thin matchsticks  
1 long red chilli, deseeded, thinly sliced  
150g (5oz) baby corn halved lengthwise  
150g (5oz) shitake mushrooms, halved  
150g (5oz) sugar snap peas, strings removed  
6 spring onions, trimmed, cut into 4cm (1½in) lengths  
1 bunch choy sum, trimmed, cut into 3 equal lengths  
handful picked coriander leaves

### **METHOD**

Combine the soy, rice wine, vinegar, garlic and grated ginger in a shallow non-metallic dish. Add the tofu and turn to coat in the marinade. Cover and refrigerate for 4 hours, turning once.

Place the noodles in a large heatproof bowl and cover with boiling water. Set aside for 5 minutes then drain well.

Heat half the oil in a large wok or frying pan. Fry the tofu (reserving the marinade) in batches until golden. Remove and set aside.

Heat the remaining oil, add the ginger and chilli, stir fry 30 seconds, add the baby corn and mushrooms, stir fry for 2 minutes more. Add the sugar snaps and spring onions, cook for 1 minute then add the choy sum, noodles and reserved marinade. Toss together for 1–2 minutes until the noodles are heated through and coated in the sauce. Return the tofu to the wok and toss to combine. Serve immediately garnished with the coriander leaves.

### **NUTRITION**

*Per serve* Energy: 1630kJ/390 cal; protein 20g; fat 12g (includes 2g saturated fat; saturated : unsaturated fat ratio 0.2); available carbs 44g; fibre 8g.

### **RECIPE**

*[The Low GI Vegetarian Cookbook \(Hachette Australia\)](#)*

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