



April 2018

GI News is published by the University of Sydney, School of Life and Environmental Sciences and the Charles Perkins Centre. Our goal is to help people choose the high-quality carbs that are digested at a rate that our bodies can comfortably accommodate and to share the latest scientific findings on food and diet with a particular focus on carbohydrates, dietary fibres, blood glucose and the glycemic index.

Publisher: Professor Jennie Brand-Miller, AM, PhD, FAIFST, FNSA

Editor: Philippa Sandall

Scientific Editor/Managing Editor: Alan Barclay, PhD, APD

Social Media: Natasha Williams

Contact: ginewsfeedback@gmail.com

Join us on: 

Sydney University Glycemic Index Research Service

Manager: Fiona Atkinson, PhD, APD

Contact: sugirs.manager@sydney.edu.au

FOOD FOR THOUGHT

HORSE SENSE FOR WEIGHT LOSS



David L. Katz, MD, discusses the implications of the JAMA study that compared low-fat and low-carbohydrate diets for weight loss and health improvement and also profiled the genes of the participants to determine if the genetic patterns thought to predict success on a given diet actually did so. The following edited extract is reproduced with his permission.

“The study, run by Professor Christopher Gardner at Stanford University, randomized over 600 adults to either a fat-restricted or carbohydrate-restricted diet making both diets as ‘good’ as possible. The result was that significant weight loss, and health improvement measured in all the usual ways, occurred in both treatment assignments. Going from the generally poor baseline diet that prevails in America to either a healthy, low-fat diet that emphasized vegetables, and whole, minimally processed foods; or to a healthy low-carbohydrate diet that also emphasized vegetables, and whole minimally processed foods produced significant, and very comparable benefits.

Study participants were not told to track or reduce calories, but by shifting to a much higher-quality diet, they did so as a by-product. Both groups cut their daily calorie intake by about 500 to 600 kcal daily (2100–2510 kilojoules), and lost the amount of weight that

would portend. They achieved this by eating wholesome foods in sensible combinations, and by applying some rules and discipline to diets that had neither at the start.

Genetic markers of expected success on one type of diet versus the other proved to be of no value. Weight loss in each diet arm was indistinguishable between those with a genetic profile saying they should do especially well, and those with profiles suggesting they should struggle. Nutrigenomically customized weight loss, despite the buzz it generates, is clearly not ready for prime time.

The study also found no relationship between baseline insulin status and success on a given diet assignment. The high-profile claims that weight loss is all about reducing carbs to reduce insulin prove to be apocryphal. A shift to wholesome foods in sensible combinations is effective at lowering weight and improving health regardless of fat or carbohydrate levels, even among those with insulin resistance at the start.

Fundamentally, then, this study suggests that the best way to lose weight and improve health with diet is not by fixating on macronutrients or calories, but by eating wholesome foods in some sensible combination, and emphasizing whole, minimally processed plant foods. The study also indicates that the fundamentals of generally healthful eating pertain to us all, regardless of our genes or insulin levels.

These findings of science may surprise some, but they don't much surprise me, and the reason is – sense. Horse sense, in particular. With horses, as with every species other than our own, we tend to think about the kind of diet that is generally right for the kind of animal, rather than the need to customize diet to each individual. Of course, the one does not preclude the other; horses can all be fed like horses, but some horses will need extra grain to maintain their weight, some will do better on certain varieties of hay. But from the start, the focus is on the common theme of a healthful diet for an entire species, and only after that, variations on the theme.

The DIETFITS study findings collectively indicate that the fundamentals of a health-promoting dietary pattern for Homo sapiens matter more than customizing on the basis of inter-individual variations. As with horses, the one does not preclude the other – but the science we own at present better empowers us to customize diet based on preference, rather than genes. It is good to know that when it comes to dietary patterns that are best for health, we do have choices among the variants on a common theme.

Dr. Katz proudly notes that DIETFITS Principal Investigator, Prof. Gardner, is a science advisor to his company, DQPN, LLC, devoted to reinventing dietary intake assessment for the digital age.

About David L. Katz

- Director, Yale University Prevention Research Center; Griffin Hospital
- Immediate Past-President, American College of Lifestyle Medicine
- Senior Medical Advisor, Verywell.com
- Founder, The True Health Initiative

Read more:

- [Horse Sense for Weight Loss](#)
- [Effect of Low-Fat vs Low-Carbohydrate Diet on 12-Month Weight Loss in Overweight Adults and the Association with Genotype Pattern or Insulin Secretion. The DIETFITS Randomized Clinical Trial](#)
- [Low-Fat Vs Low Carb? Major Study Concludes It Doesn't Matter for Weight Loss](#)

WHAT'S NEW?

VEG OR MED FOR WEIGHTLOSS AND HEART HEALTH?

Take your pick! According to research published in the American Heart Association's journal *Circulation*, vegetarian and Mediterranean diets are likely equally effective in reducing the risk of heart disease and stroke. The study included 107 healthy but overweight participants, ages 18–75, who were randomly assigned to follow either a low-calorie vegetarian diet (which included dairy and eggs), or a low-calorie Mediterranean diet for three months. The Mediterranean diet included poultry, fish and some red meat as well as fruits, vegetables, beans and whole grains. After three months, the participants switched diets for another three months. Most participants were able to stay on both diets. Researchers found participants on either diet:

- lost about 3 pounds (1.4kg) of body fat
- lost about 4 pounds (1.8kg) of weight overall and
- experienced about the same change in body mass index (BMI).

The vegetarian diet however, was more effective at reducing LDL (the “bad”) cholesterol, while the Mediterranean diet resulted in greater reductions in triglycerides, high levels of which may increase the risk for heart attack and stroke.

Read more:

- [Low-Calorie Vegetarian Versus Mediterranean Diets for Reducing Body Weight and Improving Cardiovascular Risk Profile: CARDIVEG Study \(Cardiovascular Prevention With Vegetarian Diet\)](#)

VEGAN DIET MAY REDUCE DIABETES RISK

In overweight adults with no history of diabetes, a low-fat, plant-based vegan diet can reduce visceral fat and improve both pancreatic beta-cell function and insulin resistance, potentially decreasing the risk of type 2 diabetes, according to researchers from the Physicians Committee for Responsible Medicine. (Measuring the function of beta cells, which store and release insulin, can help assess future type 2 diabetes risk.)

The study randomly assigned 73 participants with no history of diabetes either to an intervention or control group in a 1:1 ratio. For 16 weeks, participants in the intervention group followed a low-fat vegan diet based on fruits, vegetables, whole grains, and legumes with no calorie limit. The control group made no dietary changes. Neither group changed exercise or medication routines.

Based on mathematical modeling, the researchers determined that those on a plant-based diet increased meal-stimulated insulin secretion and beta-cell glucose sensitivity, compared to those in the control group. The plant-based diet group also experienced a decrease in

blood glucose levels both while fasting and during meal tests. Physicians Committee researchers posit that because the intervention group experienced weight loss, including loss of body fat, their fasting insulin resistance decreased (i.e. improved), and their beta-cell function improved as a result.

Read more:

- [A Plant-Based Dietary Intervention Improves Beta-Cell Function and Insulin Resistance in Overweight Adults: A 16-Week Randomized Clinical Trial](#)

HEALTH BENEFITS OF SWAPPING ANIMAL PROTEINS FOR PLANT PROTEINS

Substituting one to two servings of animal proteins with plant proteins every day could lead to a small reduction in the three main cholesterol markers for cardiovascular disease prevention. The health benefits could be even greater if people combined plant proteins with other cholesterol-lowering foods such as viscous, water soluble fibres from oats, barley and psyllium, and plant sterols, said lead author of the study, Dr John Sievenpiper of St. Michael's Hospital.

The study (a systematic review and meta-analysis of 112 randomized control trials in which people substituted plant proteins for some animal proteins in their diets for at least three weeks) looked at the impact of replacing animal protein with plant protein on three key markers for cholesterol: low-density lipoprotein cholesterol (LDL or “bad” cholesterol, which contributes to fatty build-ups in arteries and raises the risk for heart attack, stroke and peripheral artery disease); non-high density lipoprotein cholesterol (non-HDL-C, or total cholesterol minus HDL or healthy/good cholesterol) and apolipoprotein B (the proteins in bad cholesterol that clog arteries).

Dr. Sievenpiper said the review indicated that replacing one to two servings of animal proteins with plant proteins every day -- primarily soy, nuts and pulses (dried peas and beans, lentils and chickpeas) -- could reduce the main cholesterol markers by about 5 per cent. “That may not sound like much, but because people in North America eat very little plant protein, there is a real opportunity here to make some small changes to our diets and realize the health benefits,” he said.

Read more:

- [Effect of Plant Protein on Blood Lipids: A Systematic Review and Meta-Analysis of Randomized Controlled Trials](#) (PDF)

PARENTING IN THE FACE OF OBESITY AND EATING DISORDERS

Childhood obesity is a reality for one in five children in the USA. Five million young people are living with severe obesity. At the same time, half a million US teens are living with an eating disorder. Parents and healthcare providers can't afford to neglect either of these very real problems.

A study in *Pediatrics* however reports that encouraging teens to diet can do lasting harm. Teens who receive diet talk from their parents are more likely to have problems with obesity as adults. But that's not all. These teens are also more likely to have issues with binge eating, unhealthy weight-related behaviours, and body dissatisfaction in adulthood.

Most troubling, though, is the finding that this cycle repeats. As parents, these young adults are more likely to inflict that diet talk on their own children. The cycle repeats.

[ConscienHealth's Ted Kyle](#) reports on that confusing four-letter word and what parents should do.

Everyone has a diet, meaning their pattern for eating day after day. But in the context of going on a diet, it becomes a verb – dieting. And that's where the problem starts. Short-term, highly restrictive diets are not a prescription for long-term health. Nonetheless, people consume great volumes of information about diets: low carb, low fat, Mediterranean, vegetarian, flexitarian, DASH, and the list goes on. Some of these can be the foundation for a sustainable pattern of eating for good health. Others can be severely restrictive and unsustainable. What is clear is that parenting requires attention to the severe harm that four letter word, “diet,” can do. Great harm can result when a parent encourages a child to diet. So, what should parents do and say?

The most basic advice is simple: unconditional love. Beyond that basic impulse for all parenting, the American Academy of Pediatrics (AAP) points to some basics for preventing both obesity and eating disorders in teens.

- Discourage dieting.
- Model a sustainable healthy pattern for eating.
- Promote a positive body image.
- Plan for family meals.
- Talk health, not weight.
- Pay attention to bullying and mistreatment. If you see clues that something is wrong, follow up. Schools and teachers have an obligation to help.
- Seek out real help for obesity. Talk to your pediatrician. Seek out a qualified program with specialists who understand that obesity is a biological issue – not a character flaw or the product of bad parenting.

Read more:

- Click [here](#) for the study by Berge et al
- Click [here](#) for a companion commentary
- For guidance from the AAP, click [here](#)
- [ConscienHealth News](#)

PERSPECTIVES: DR ALAN BARCLAY

DIABETES TIMES FIVE

While we have known about diabetes for several thousand years, our knowledge and understanding of its causes, pathophysiology and management is constantly evolving. One of the more important areas of research that doesn't receive the attention it deserves is how we classify the different types. It's important because it affects how we manage the condition (e.g., with pharmaceuticals, dietary strategies, etc) and also how we pay for its management (Pharmaceutical benefits; Health Insurance rebates, etc).

The current diabetes classification system, with which most people are familiar, was developed back in 1979 and lists four types:

1. Insulin-dependent or type 1 diabetes

2. Non-insulin-dependent or type 2 diabetes
3. Gestational diabetes
4. Diabetes associated with other syndromes or conditions (e.g., monogenic diabetes syndromes (such as neonatal diabetes and maturity-onset diabetes of the young [MODY]), diseases of the exocrine pancreas (such as cystic fibrosis), and drug- or chemical-induced diabetes (such as in the treatment of HIV/AIDS or after organ transplantation)).

Classifying diabetes into type 1 and type 2 relies primarily on the presence (type 1) or absence (type 2) of autoantibodies against pancreatic islet Beta (B)-cell antigens and age at diagnosis (younger for type 1 diabetes). With this approach, 75–85% of patients are classified as having type 2 diabetes. Of the fourth group, diabetes associated with other syndromes or conditions, latent autoimmune diabetes in adults (LADA) affects less than 10% of people with diabetes, is defined by the presence of glutamic acid decarboxylase antibodies (GADA), is phenotypically indistinguishable from type 2 diabetes at diagnosis, but becomes increasingly similar to type 1 diabetes over time.

Perhaps unsurprisingly, scientists and physicians have been thinking for some time that the current classification system presents challenges to the diagnosis and treatment of people with diabetes, in part due to its conflicting and confounding definitions of type 1, type 2, and LADA.

Back in 2016, a group of US scientists proposed a new B-cell-centric classification of diabetes, based on the presupposition that all diabetes originates from a common denominator – the abnormal pancreatic B-cell. It recognized that interactions between genetically predisposed B-cells with a number of factors, including insulin resistance, susceptibility to environmental influences, and immune dysregulation/inflammation, lead to the range of diabetes sub-types within the spectrum of diabetes. Individually or in concert, and often self-perpetuating, these factors contribute to B-cell stress, dysfunction, or loss through at least 11 distinct pathways. The authors concluded that this classification system enabled “Available, yet underutilized, treatments [to] provide rational choices for more personalized therapies that target the individual mediating pathways of hyperglycemia at work in any given person with diabetes, without the risk of pharmacologically-related hypoglycemia or weight gain or imposing further burden on the B-cells”. To-date, there is little evidence that the B-cell–centric classification of diabetes has been adopted.

The most recent (2018) diabetes classification system has been conceived by Swedish scientists. They developed a 5-cluster system based on the analysis of nearly 9000 people aged 0–96 years who developed diabetes between 2008 and 2016.

| Cluster | Number of people | Proportion of people | Key characteristics | Medication | Recommended name |
|---------|------------------|----------------------|--|------------------------------------|-----------------------------------|
| 1 | 577 | 6.4% | Early age of disease onset, relatively low BMI, poor metabolic control, insulin deficiency (impaired insulin production), high HbA1c, presence of GADA, ketoacidosis at diagnosis. | Highest insulin; Low metformin use | Severe autoimmune diabetes (SAID) |

| | | | | | |
|---|------|-------|--|-------------------------------------|--|
| 2 | 1575 | 17.5% | Similar to cluster 1 but no GADA, highest incidence of retinopathy. | High insulin; High metformin use | Severe insulin deficient diabetes (SIDD) |
| 3 | 1373 | 15.3% | Insulin resistance, high BMI, highest incidence of non-alcoholic fatty liver and kidney disease. | Low insulin use | Severe-insulin resistant diabetes (SIRD) |
| 4 | 1942 | 21.6% | Obesity, younger age, not insulin resistant. | Low insulin use | Mild obesity-related diabetes (MOD) |
| 5 | 3513 | 39.1% | Older age, modest metabolic alterations. | Low insulin use | Mild age-related diabetes (MARD) |

Modelling the new system in 500–3500 additional Swedish and Finnish people demonstrated that it was superior to the current diabetes classification system, because it identified people at high risk of diabetic complications (e.g., kidney and eye disease) at diagnosis and provided information about underlying disease mechanisms, thereby guiding choice of therapy.

This new analysis provides another important step towards a more precise, clinically useful stratification of diabetes, representing an important step towards precision medicine in diabetes. It is of course important to note that the new classification system was based on people primarily from northern Europe, with limited non-Scandinavian representation, and the applicability of this strategy to people of other ethnicities needs to be assessed before the model can be adopted globally.

Read more:

- [History of diabetes](#)
- [The Time Is Right for a New Classification System for Diabetes](#)
- [Novel subgroups of adult-onset diabetes and their association with outcomes: a data-driven cluster analysis of six variables](#)



Alan Barclay PhD is a consultant [dietitian](#). He worked for Diabetes Australia (NSW) 1998–2014. He is co-author of over 30 scientific publications, and author/co-author of *The Good Carbs Cookbook* and *Reversing Diabetes* (Murdoch Books), *The Low GI Diet: Managing Type 2 Diabetes* (Hachette Australia) and *The Ultimate Guide to Sugars and Sweeteners* (The Experiment Publishing, New York).

Contact: You can follow him on [Twitter](#) or check out his [website](#).

KEEPING IT GREEN – EATING FOR BODY AND PLANET

THE LAST STRAW

Single use straws made sense when contaminated cups were an issue. Thanks to improved hygiene standards, catching infectious diseases from drinking vessels is less of an issue but now we have bigger things to worry about. Disposable plastic drinking straws are an environmental disaster.

The problem with straws Unable to be recycled, plastic straws are used for 20 minutes at most, then remain intact for hundreds of years. At the popular Manly Beach in Sydney, Australia, scuba diver Kasey Turner found 319 straws during a 20-minute snorkel. Only 1 day

later she returned and found an additional 294 straws at the same spot! The following weekend she repeated this exercise and found a further 150 straws, showing just how quickly these straws accumulate. And they're everywhere. According to the [Ocean Conservancy's 2017 Report](#), straws made the list of top 10 pollutants littering international coastlines.

Besides making a mess, straws do terrible damage to aquatic life. A [video](#) posted in 2015 showing a plastic drinking straw being painfully extracted from the nostril of a turtle off Costa Rica (the video has a warning that it may be inappropriate for some users because it is so upsetting). Straws are even swallowed by seabirds, which then puncture vital organs or block airways leading to a horrible death.

Compostable drinking straws are not much better than plastic straws as very few people compost them, and they are not designed to break down in the ocean. Even if some plastic straws do manage to break down, they become smaller microplastics that fish then eat, and we then eat those fish, plastic and all (yuk). By 2025 [it's been projected](#) there will be more plastic than fish in the oceans.

Straws don't always suck Straws do have some great uses. Not only do they give us that Instagram perfect pout as we sip on a cocktail, they also keep ladies' lipstick intact, and make for a less messy drinking experience for kids (especially in the car). Straws can also reduce contact between sugary drinks and teeth, which helps prevent cavities and dental erosion. As straws send liquid to the back of the mouth they reduce flavour exposure for those suffering from nausea (e.g during chemotherapy or morning sickness). Bendy straws also make drinking easier for the less-able, such as the ill, frail, or those with coordination and movement difficulties.

Do you really need a straw? You don't drink beer or wine through a straw, so why not just say "no straw please". Your drinks taste just as good (probably better) without a plastic straw. Perhaps a bit more "slow eating" (and drinking) would help. Straws tend to go with grab 'n go drinks with bubbles and sugar. Let's face it, we could do with less of these. Taking water with you in a re-usable bottle has health and environmental benefits.

But I'm a sucker for straws! For those of you who can't give up your straws, there are alternatives, and trendy ones at that. Some bars and cafes already have stainless steel, re-useable straws. You already use their metal cutlery, so why not a metal straw? Metal straws have the added benefit of becoming chilled, which makes your drink even more refreshing, and no plastic taste. You can even buy a stainless-steel straw for home-use and they often come with a cleaning brush. Other plastic straw alternatives include copper, glass and bamboo straws. You can even buy straws from Harvest Straws made from (would you believe it) straw! That's right, straws have come full circle and are now once again made of wheat or rye straw.

Keeping it green, in a nutshell

- Single-use plastic straws are an environmental disaster and can be devastating to marine life.
- To reduce plastic pollution, asks for drinks with "no straw please"

- For straw devotees, try a reusable drinking straw.

Thanks to Rachel Ananin aka TheSeasonalDietitian.com for her assistance with this article.



In this series we explore how you can reduce your ecological impact through your food choices. We'll help you do your bit for the environment, one mouthful at a time.

Nicole Senior is an Accredited Nutritionist, author, consultant, cook, food enthusiast and mother who strives to make sense of nutrition science and delights in making healthy food delicious.

Contact: You can follow her on [Twitter](#), [Facebook](#), [Pinterest](#), [Instagram](#) or check out her [website](#).

GOOD CARBS FOOD FACTS A TO Z

QUINOA

Quinoa ticks so many boxes – tasty, quick cooking, packed with nutrition, gluten free, versatile and colourful it features in soups, salads, sides, mains, desserts and snacks. It is now grown around the world. What a tasty success story. While it may currently be the trendiest grain on the block, it's not so very long ago that none of us outside the Altiplano had heard of it. But it has always been the Americas other major grain. But, unlike corn (maize), the rest of the world forgot about it for several hundred years. How come the comeback? Three enthusiastic Americans—Stephen Gorad, Don McKinley and David Cusack of the Quinoa Corporation (now [Ancient Harvest brand](#)) put quinoa on our plates. The recipe shown in the photograph is [Chrissy Freer's Spice roasted cauliflower, quinoa and petipa pilaf courtesy Australian Healthy Food Guide](#).

To rinse or not to rinse? Like many seeds, quinoa arms itself with bitter-tasting compounds in its outer skin to deter the unwelcome attention from insects and birds. In this case it's saponins. Most quinoa has been treated in some way to remove the saponins before being packaged for sale, but it's probably a good idea to pop the grains in a sieve and run them under cold water first. Saponins are phytochemicals found in very small amounts in many plants including veggies (peas, soybeans) and herbs. They tend to pass straight through us as they are poorly absorbed by our bodies. Heating destroys them. Naming rights comes from the soapwort plant (*Saponaria officinalis*)—its root was used as soap (Latin *sapo* "soap") as they have a natural foaming tendency. With natural cleaning products making a comeback, there's growing interest in using saponins for making natural detergents.

| | |
|---|-------|
| Good Carbs Food Facts | |
| Quinoa, cooked following packet instructions | |
| ★ ★ ★ ★ ★ | |
| Glycemic index 53 | |
| Gluten free | |
| Serving size – ½ cup cooked (95g/3½oz) | |
| Kilojoules | 400 |
| Calories | 95 |
| Protein | 4g |
| Fats – Total | 1.6g |
| --Saturated fat | 0.2g |
| –Unsaturated fat | 1.4g |
| –Cholesterol | 0g |
| Saturated : unsaturated fat ratio | 0.14 |
| Carbohydrates – Total | 17g |
| <i>Available</i> | 15g |
| --Natural sugars | 1g |
| –Natural starches | 14g |
| –Added sugars | 0g |
| –Added starches | 0g |
| <i>Unavailable</i> | |
| –Dietary fibre | 2g |
| Sodium | 4mg |
| Potassium | 151mg |
| Sodium : potassium ratio | 0.03 |
| Glycemic load | 8 |
| Diabetes exchange | 1 |
| Ingredients: Quinoa, water | |

Source: [The Good Carbs Cookbook](#)

IN THE GI NEWS KITCHEN

THE GOOD CARBS COOKBOOK

| | |
|---|---|
|  | <p>The Good Carbs Cookbook (by Alan Barclay, Kate McGhie and Philippa Sandall) published by Murdoch Books helps you choose the best fruits, vegetables, beans, peas, lentils, seeds, nuts and grains and explains how to use them in 100 refreshingly nourishing recipes to enjoy every day, for breakfast, brunch, lunch, dinner and dessert. The recipes are easy to prepare, (mostly) quick to cook, long in flavour and full of sustaining goodness, so you feel fuller for longer. There is a nutritional analysis for each recipe and tips and helpful hints for the novice, nervous, curious or time-starved cook.</p> |
|---|---|

MIXED GRAINS SALAD WITH MARINATED ZUCCHINI

Slow cooking barley combines with quick-cooking quinoa in this refreshing salad. The grains soak up the bold flavours giving this Med-style dish real bite and substance. Serves: 6 •

Preparation time: 40 minutes Cooking time: 30 minutes

6 small zucchini (courgettes)
About ¼ cup olive oil
Salt flakes and freshly ground pepper
2 garlic cloves, crushed
¼ cup red wine vinegar
1 tablespoon caster sugar
3 tablespoons torn mint leaves
3 tablespoons torn parsley leaves

Mixed grains salad

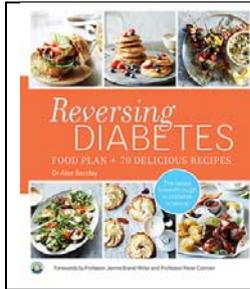
1 cup pearl barley, cooked
1 cup quinoa, rinsed and cooked
1 cup halved red cherry tomatoes
1 cup halved yellow cherry tomatoes
½ cup pitted black olives
½ cup walnut halves
4 large leaves radicchio, roughly torn
2 handfuls torn pale inner leaves of curly endive or rocket
Sea salt flakes and ground pepper to taste (optional)
⅓ cup extra virgin olive oil
1 tablespoon red wine vinegar

To make the marinated zucchini, wash, trim and cut the zucchini lengthways into 8 mm ($\frac{3}{8}$ in) thick slices. Working in batches, heat 2 tablespoons of the olive oil in a sturdy non-stick pan over medium-high heat. Arrange the zucchini in a single layer in the pan and cook about 3 minutes each side until well browned. Remove from the pan, arrange in a shallow dish and sprinkle lightly with salt and pepper. Warm the garlic, vinegar and sugar in a small pan and pour over the zucchini. Scatter with mint and parsley, toss lightly and leave at room temperature for 1 hour before serving. • Put the barley, quinoa, tomatoes, olives, walnuts, radicchio and curly endive into a large bowl with salt and pepper to taste. Whisk the oil and vinegar together until emulsified, pour over salad and toss lightly. Serve the salad topped with marinated zucchini.

Per serve

1590kJ/380 calories; 5g protein; 31g fat (includes 4g saturated fat; saturated : unsaturated fat ratio 0.15); 18g available carbs (includes 5.5g sugars and 12.5g starches); 5g fibre; 150mg sodium; 410mg potassium; sodium : potassium ratio 0.37

REVERSING DIABETES



The latest research into type 2 diabetes shows that for some people it's possible to put diabetes into remission and for others they can prevent or at least delay the complications of diabetes. [Reversing Diabetes published by Murdoch Books](#) explores what these findings mean for you. Drawing on over 20 years of clinical experience as an Accredited Practising Dietitian, including nearly 16 years at Diabetes Australia, Dr Alan Barclay combines the highest quality evidence about the nutritional management and prevention of diabetes into one easy-to-read book with 70 delicious recipes.

TOMATO, MOZZARELLA AND OLIVE QUINOA PIZZAS

Quinoa has a light, nutty texture with a slight crunch and will give the pizza bases a lovely crisp texture. Serves 4 • Preparation 20 minutes + 1 hour resting • Cooking 1 hour

- ¼ cup quinoa, rinsed
- 2 teaspoons instant dried yeast
- 1 cup wholemeal plain flour
- ½ cup stone-ground plain flour
- semolina, for sprinkling
- 140g (5oz) artichoke hearts in brine, rinsed and halved
- 100g (3½oz) reduced-fat grated mozzarella cheese
- ⅓ cup black olives, halved
- 1 handful basil leaves
- 200g (7oz) baby English spinach leaves
- 250g (9oz) baby roma tomatoes, halved
- 1 small Lebanese (short) cucumber, thinly sliced
- 2 tablespoons balsamic vinegar

Tomato sauce

- 2 teaspoons olive oil
- 1 brown onion, finely chopped
- 2 garlic cloves, crushed
- 500g (1lb 2oz) ripe tomatoes, finely chopped

Put the quinoa and ½ cup water in a saucepan and bring to the boil. Reduce the heat, cover and simmer for 10–12 minutes or until all the liquid has evaporated. Transfer to a bowl to cool. • Stir the yeast into 185ml (6fl oz/¾ cup) tepid water until the yeast has dissolved. Combine the quinoa and flours in a large bowl. Make a well in the centre, add the yeast mixture and mix to a soft dough. Turn the dough out onto a lightly floured surface and knead for 10 minutes or until smooth and elastic. Return the dough to the lightly oiled bowl, cover with a tea towel (dish towel) and rest in a warm place for 1 hour or until doubled in size.

To make the sauce, heat the oil in a saucepan over medium heat. Cook the onion, stirring, for 4 minutes or until softened. Add the garlic and stir for 1 minute. Add the tomatoes, reduce the heat to low, cover and simmer, stirring occasionally, for 15 minutes or until the sauce has thickened. Remove the lid and cook for 5 minutes or until reduced by two-thirds. Set aside to cool, then purée using a stick blender.

Preheat the oven to 220°C (425°F). Sprinkle two large baking trays with semolina. Divide the dough into four portions and roll each on a lightly floured surface into a 20cm (8inch) round, about 5mm (¼inch) thick. Place on the prepared trays. • Spread the tomato sauce over the bases, then top with the artichokes, mozzarella and olives. Bake the pizzas for 18–20 minutes or until crisp and golden. Top with the basil leaves and cut into wedges. • Drizzle the spinach, tomatoes and cucumber with the vinegar and serve with the pizzas

Per serve

1790kJ/ 426 calories; 21g protein; 9.5g fat (includes 3g saturated fat; saturated : unsaturated fat ratio 0.46); 58g available carbs (includes 10g sugars and 48g starches); 11g fibre; 270mg sodium; 1150mg potassium; sodium : potassium ratio 0.23

COPYRIGHT AND PERMISSION

This website and all information, data, documents, pages and images it contains is copyright under the Copyright Act 1968 (Commonwealth of Australia) (as amended) and the copyright laws of all member countries of the Berne Union and the Universal Copyright Convention. Copyright in the website and in material prepared by GI News is owned by University of Sydney, School of Life and Environmental Sciences and the Charles Perkins Centre. Copyright in quotations, images from published works and photo libraries, and materials contributed by third parties including our regular contributors Alan Barclay, Jennie Brand-Miller, Nick Fuller, and Nicole Senior is owned by the respective authors or agencies, as credited.

GI News encourages the availability, dissemination and exchange of public information. You may include a link to GI News on your website. You may also copy, distribute, display, download and otherwise freely deal only with material owned by GI News, on the condition that you include the copyright notice “© GI News, University of Sydney, School of Life and Environmental Sciences and the Charles Perkins Centre” on all uses and prominently credit the source as being GI News and include a link back to www.gisymbol.com/gi-news. You must, however, obtain permission from GI News if you wish to do the following: charge others for access to the work; include all or part of the work in advertising or a product for sale, or; modify the work. To obtain such permission, please contact ginewsfeedback@gmail.com. This permission does not extend to material contributed and owned by other parties. We strongly recommend that you refer to the copyright statements at their respective websites and seek their permission before making use of any such material, whether images or text. Please contact GI News if you are in doubt as to the ownership of any material.

DISCLAIMER GI News endeavours to check the veracity of news stories cited in this free e-newsletter by referring to the primary source, but cannot be held responsible for inaccuracies in the articles so published. GI News provides links to other World Wide Web sites as a convenience to users, but cannot be held responsible for the content or availability of these sites. All recipes that are included within GI News have been analysed however they have not been tested for their glycemic index properties by an accredited laboratory according to the ISO standards.