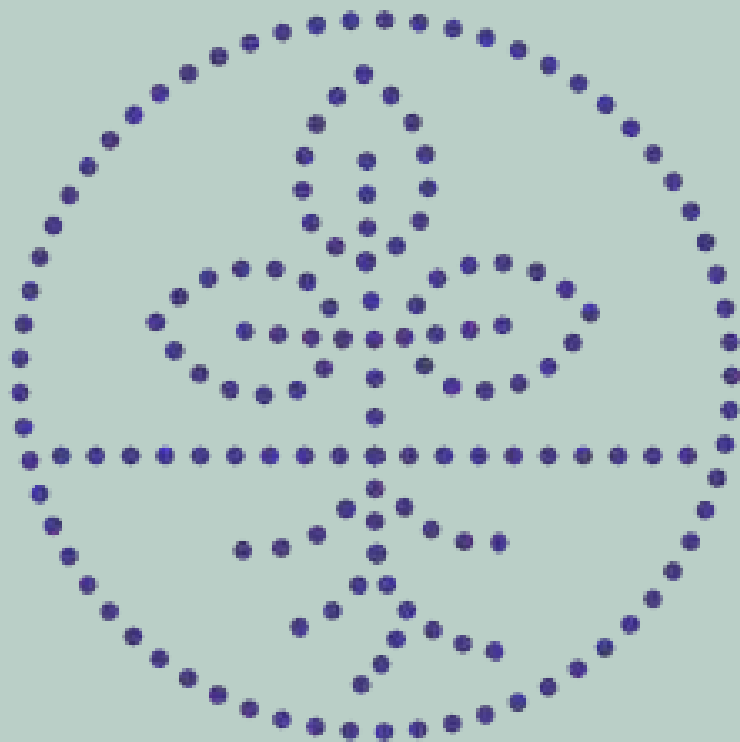


# The Paleo Ketogenic (PK) Diet



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# Why use a PK Diet?

Ketogenic diets have been used to treat childhood epilepsy since the 1920s and since that time ketogenic and other low carbohydrate high fat diets have demonstrated a host of benefits for many health conditions, weight and fat loss, and for improving sports especially endurance performance.

High carbohydrate diets are thought to play a role in the causation of Alzheimer's Disease and ketogenic diets offer a potential treatment option. Early research also suggests that a ketogenic diet can reduce Parkinson's Disease activity and is famously used by Terry Wahls to treat patients with MS.

In the clinic we routinely recommend this approach to eating for patients with neuro-degenerative disease (Alzheimers, Parkinsons, MS, epilepsy), and for patients who may require time with more carbohydrate restriction to achieve weight loss or control of inflammation.

The PK approach has also been pioneered by Dr Sarah Myhill as a keystone for the treatment of chronic fatigue and ME. This is because energy production is far more efficient (approximately 1/3 improvement), when burning fat rather than carbohydrates in the mitochondria. If there is mitochondrial insufficiency creating a reduction in the amount of energy being produced, we can see improvements in the level of energy without improvements in mitochondrial numbers, simply by switching to burning fat.

## What is Ketosis?

Ketosis refers to the metabolic state that typically occurs during fasting or carbohydrate restriction. In this state ketone bodies are created from fats and some amino acids. The body continues to use considerable amounts of carbohydrates initially (which are provided by liver glycogen which is broken down into glucose). When carbohydrates are exhausted, ketones can be used instead as fuel.

During the process of 'keto-adaptation' (restricting carbohydrates for a minimum of three weeks), the body gradually switches fuel sources and increases fat-burning capacity through a series of physiological changes. Some of those changes enable the brain to switch from burning glucose to burning ketones and allow muscle to burn free fatty acids (reserving ketones for the brain).

Keto-adaptation also protects the body from using lean muscle protein as an energy source. This is why bodybuilders find it so appealing (you get maximum fat burn with minimum loss of muscle).



## What are ketones?

The ketone bodies are brain and body friendly fuels derived from fatty acids and some amino acids. The ketone bodies are Acetoacetate, Beta hydroxybutyric acid (BOHB) and acetone. These ketone bodies are produced through a process called 'ketogenesis' in the liver. Once production is high enough, the ketone bodies can be measured in the blood, urine and breath.

It is important to note that during ketosis, blood glucose levels stay within normal physiological limits due to the creation of glucose from amino acids and fatty acid oxidation. The production and regulation of glucose is crucially important as certain cells (in particular red blood cells), are only able use glucose as a fuel source.

# Keto Benefits

- Provides a long term steady energy source that removes hypoglycaemia -induced hunger cravings
- Stabilizes blood sugar thereby reducing stress to the body especially adrenals
- Provides a steady, optimal source of fuel to the brain, often eliminating 'brain fog'
- Improves insulin sensitivity (reducing the risk of and even reversing diabetes)
- Reduces inflammation
- Eliminates fermenting gut, reduces Candidal overgrowth and improves oral health
- Sleep may improve as blood sugar stabilises
- Fasting becomes easier and weight loss is much more achievable for some patients who otherwise struggle.



Ketosis can normally be achieved by restricting carbohydrates under 20grams per day but you might be able to tolerate up to 40 to 50gms and remain in ketosis. This all depends on your degree of carbohydrate tolerance. Protein is usually kept at around 25% of the macronutrients unless you are very active.

**Tip** – if tracking everything you read seems overwhelming some people find it helpful to focus solely on keeping their net carbohydrates at or below 20grams for the first one to two weeks. Once you get used to this step you can begin tracking your other macros protein and fat as well as your caloric intake if you choose.

## The Paleo-Keto Approach

Paleo keto means a grain-free and dairy-free ketogenic diet. Reasons we may advise dairy avoidance includes:

- Milk contains growth promoters to help young mammals to grow quickly. These may also increase the risk of cancer growth in adult humans.
- Dairy can lead to calcium and magnesium imbalances which may even increase the risks of osteoporosis. We need magnesium as well as calcium for our bones in a 1-1 ratio, dairy is 10-1 and in a low magnesium diet, may induce relative magnesium deficiency.
- Dairy is highly allergenic and increases the risk of autoimmunity

If you suffer from no autoimmunity and are otherwise completely well, then high quality, organic dairy may be permissible in the form of grass-fed butter, cream or full fat yoghurt and cheeses. Dairy fat is the safest part of dairy products and better than butter is ghee.

*Please consult your Nutritional Therapist or Dr Sarah about the exclusion or inclusion of dairy in your diet.*



# Getting the 'Macronutrients' right

The 3 primary macronutrients are protein, fat and carbohydrate, on the ketogenic diet we need to aim for is 5% carbohydrates, 25% protein 70% fat.

## Fat

While keto is a high-fat diet it is important to educate yourself as to which specific types of fat are good to eat and which should be avoided.

- Do not eat hydrogenated fats – margarines and other spreads, if the fat has been hydrogenated, the resulting 'trans-fat' will be pro-inflammatory.
- Cook with saturated fats such as lard (any animal fat), butter, ghee or coconut oil – these fats retain their shape after cooking. However, avocado oil (which has a high smoke point) is also safe for high heat cooking.
- Use cold pressed oils (as opposed to fats which are solid) at room temperature – olive, flax, hemp, black seed, and avocado.



### Fats to include

- Lard
- Olive oil
- Flax oil
- Coconut oil
- Avocado oil
- Butter / Ghee (if dairy tolerant and agreed by Dr Sarah)
- Cold water fish oil
- MCT Oil (start slowly as causes stomach ache initially)

### Fats to avoid

- Margarine
- Vegetable oils
- Sunflower oils
- Soya oil
- Rapeseed oil



# Foods to avoid

- Gluten – anything that contains barley, rye or wheat
- Gluten free grains- amaranth, millet, oats, quinoa, rice
- Dairy- milk (including sheep and goat), ice cream, Whey protein, yoghurt
- Maize – corn, cornflour, sweetcorn, polenta
- Legumes- beans, lentils, peas
- Peanuts (these are actually legumes)
- Soya – textured vegetable protein, soya milk and yoghurt, soya sauce / Tamari
- Sweetened fruit juices
- Sweeteners: sugar, alcohols, honey, agave, maple syrup, molasses coconut palm sugar



## Ketogenic foods to enjoy -

- Proteins - beef, lamb, pork, poultry, game (organic and grass fed where possible). Fish: sardines, anchovies, salmon, pollack, sole, trout, mackerel, coley. Liver and organ meats.
- Organic Vegetables- Artichokes, asparagus, pak choi, broccoli, sprouts, cabbage, cauliflower, lettuce, mushrooms, olives, onions, parsnips, sea vegetables, spinach, kale (and all leafy greens), courgettes, cucumber, peppers
- Eggs
- Almonds, brazil nuts,
- Pumpkin, sesame, chia, flax seeds
- Healthy Fats- avocado, avocado oil, coconut oil, olive oil, flax oil, hemp oil, black seed oil, MCT oil
- Fruits (organic) - blackberries, blueberries, cranberries, raspberries
- Seasonings- apple cider vinegar (with mother), basil, bay leaf, black pepper, Cacao, cardamom, carob, coriander, cinnamon, clove, cumin, dandelion, dill, fennel seeds, garlic, ginger, mustard, nutmeg, oregano, parsley, rosemary, sea salt, tarragon, thyme, turmeric
- Beverages- teas- all varieties of herbal tea, green tea in moderation (organic where possible) organic ground coffee caffeinated or decaffeinated in moderation
- Flax seeds can be ground and added to coconut yoghurt or ground to make flax bread: [https://www.drmyhill.co.uk/wiki/The\\_Paleo\\_Ketogenic\\_Diet\\_-\\_PK\\_Bread](https://www.drmyhill.co.uk/wiki/The_Paleo_Ketogenic_Diet_-_PK_Bread)
- Tahini

## Getting started

There is no such thing as a slow transition but the switch from carb to fat burning (efficiently), usually takes around 2 weeks. In some cases, this is longer and needs a little help. Chromium can help some patients and making sure your thyroid is working well (or well replaced), is essential prior to trying to burn fat.

## Preparing – Food shopping

Get together your diet books, recipes and make a list – you will need more green veg and salad than perhaps you are used to – and a lot more fat. There is no such thing as too many avocados and the large tubs of almond butter start to look a lot smaller once your snacking urge kicks in.

We also encourage you to keep your veg clean and organic – especially salad leaves. If you are struggling with supermarkets, then try an organic online delivery for your fruit and veggies. Online frozen organic berries are also a good way to reduce exposure to pesticides.

## Home testing for ketosis

While blood monitoring is the most accurate way to track progress (and you can track sugars and ketones accurately), this method is a bit expensive (due to the cost of the strips), and finger-prick blood tests aren't for everyone. However, the options are wide including:

ebKetone Meter: <https://www.valuemed.co.uk/collections/blood-ketone-meters>

Keto Mojo: <https://keto-mojo.com/>

GlucorX: <https://www.glucorx.co.uk/shop/glucorx-hct-meter/>

**Breath Monitoring:** Easier and cheaper – if a little less reliable. This will still get you the information you need to check on progress (no blood test required):

Ketonix Meter: <https://www.ketonix.com>



**Urine strips:** The cheapest option – these will work at first but become less reliable as you keto adapt.

[https://esuppliesmedical.co.uk/disposables/diagnostics/urinalysis/ketostix-for-acetoacetic-acid-ketone-tube-of-50?gclid=EAAlQobChMkKj-kYub7AIVFuvtCh2HggEbEAOYASABEgLT6PD\\_BwE](https://esuppliesmedical.co.uk/disposables/diagnostics/urinalysis/ketostix-for-acetoacetic-acid-ketone-tube-of-50?gclid=EAAlQobChMkKj-kYub7AIVFuvtCh2HggEbEAOYASABEgLT6PD_BwE)



## Resources for recipes and inspiration

### Recipe books

- Vivica Menegaz: The Keto Paleo Kitchen
- Suzanne Ryan: Simply Keto (contains dairy)
- Terry Wahls: The Wahls Protocol Cooking for Life

### Websites

- Paleo Leap: Keto diet Recipes
- Keto Summit PK Recipes
- Real Balanced PK recipes

# Tips and treats

Bread, Cakes and fat bomb treats are all worth learning about – but most of your diet should still be vegetables, protein and healthy fats. However, if you are in need of a carb-like fix, then I find the following tips helpful:

## Linseed bread:

DR Myhills 3 ingredient bread is very simple to make and surprisingly delicious. The addition of caraway or fennel seeds is also great:

[https://www.drmyhill.co.uk/wiki/The\\_Paleo\\_Ketogenic\\_Diet\\_-\\_PK\\_Bread](https://www.drmyhill.co.uk/wiki/The_Paleo_Ketogenic_Diet_-_PK_Bread)

We make this at home into rolls and back for about 45 minutes (rather than a full loaf). Serve hot with vegan butter, we like the block from Naturli.

Or top with home-made dairy free avocado dip or Pate (if you find an organic, dairy free pate commercially available let me know).

## Other breads include:

<https://www.dietdoctor.com/low-carb/keto/recipes/bread>

## Paleo-Keto cakes:

There are so many if you just google dairy free keto cakes. A low carb sweetener is required, I use Xylitol (granulated), for special occasions, others may prefer Stevia. A real revelation to me was that you could make a cake in a mug in the microwave in under 5 minutes (my children now expect these at weekends on demand)! Here are a few for starters:

<https://www.gnom-gnom.com/paleo-keto-mug-cake/>

<https://cleananddelicious.com/2-minute-vanilla-mug-cake-recipe-keto-paleo/>

<https://www.sweetashoney.co/keto-lemon-mug-cake/>





## Fat bombs:

For some people, it's a real struggle to eat enough fat to compensate for the loss of carbs. If you are struggling with weight-loss, then these high fat treats are a great way to increase calorie intake.

<https://www.bulletproof.com/recipes/keto-recipes/fat-bombs-recipes-1b2b3c4b4t/>

<https://www.healthfulpursuit.com/roundup/18-keto-fat-bombs/>

## Coconut milk/cream:

Grace coconut milk can be purchased in bulk and has a nice texture and no too 'coconutty' flavour – goes well with berries as a dessert or at breakfast and delicious in coffee.