

MMC FACT SHEET 903

CANCER-FIGHTING DIET (ketogenic)

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Normal body cells produce energy by oxidizing sugar in the process of metabolism. In 1955 double Nobel Prize laureate Otto Warburg proposed that some forms of cancer developed when oxygen levels fell and the cell was forced to change its energy source to a more primitive anaerobic "glucose fermentation" system. Maintaining levels of respiratory (oxygen-producing) enzymes should therefore act as a preventative. L-carnitine, antioxidants and B vitamins will improve cellular respiration and perhaps encourage cancer cell normalization. A trial for at least of 52 days should be considered. Studies have also demonstrated that glucose restriction may slow tumour growth.

A ketogenic diet involves eliminating foods high in carbohydrates (starchy fruits and vegetables, bread, pasta, grains and sugar) while increasing the consumption of foods high in fat (cream and butter). A ketogenic diet of 70% fat, 20% protein and 10% carbohydrate, will force the body to mimic starvation and burn fat, rather than following the normal metabolic pathway which converts carbohydrate into glucose. The metabolism of fat produces ketones in the liver; these pass into the brain and replace glucose as an energy source in a process called ketosis. The diet has just enough protein for body growth and repair, and sufficient calories to maintain the correct weight. Ketones that may also inhibit cancer growth. Their excess acidity may be buffered with citrate and alkaline vegetable juices. Constipation is commonly experienced but can be eased with supplementary fibre. The breath may also smell strange.

FOODS TO INCLUDE

HIGH PROTEIN FOODS

All red meats

Beef, veal, venison, lamb and pork - **PREFER organic & free range.**

All fish

Cold water fish - salmon, cod, snapper, tarakihi, tuna, mackerel
3-4 servings weekly

Other fish food - crab meat, prawns, mullet, oysters, herrings, sardines, scallops, squid, octopus.
1-2 servings weekly.

AVOID larger fish (shark, marlin) that may have high levels of mercury.

All fowl

Chicken, duck, goose, turkey, pheasant, quail - **PREFER organic & free range.**

Dairy products

Cheese - cottage cheese, camembert, edam, feta, mozzarella, parmesan, romano, swiss, plain.
Sour cream, yoghurt.
Soy milk.

Eggs

All kinds - **PREFER organic free range.**

Beans

Soy, kidney, haricot, split peas, butter, green, purple beans, tofu.



LOW CARBOHYDRATE FOODS

Vegetables

PREFER organic

Alfalfa sprouts, asparagus, avocado, bamboo shoots, broccoli, bok choy, cabbage, capers, cauliflower, celery, chicory, cucumbers, gherkins dill pickles, dandelion greens, eggplant, endive, kale, kohlrabi, lettuce, leeks, watercress, mushrooms, mustard greens, parsley, okra, garlic, green and red peppers, radishes, sorrel, spinach, silverbeet, turnip, zucchini, tomato, watercress, artichoke.

Small amounts of beetroot, carrot, onions, choko.

Fruits

Lemons, limes, loquat, fresh strawberries, raspberries, cherries, blackberries, blueberries.

HIGH OMEGA3 FATTY ACIDS FOODS

Nuts and seeds **All in moderation.**

Almonds, walnuts, pecans, sunflower seeds, pumpkin seeds, linseed, sesame seeds, macadamia nuts.

Oils and fats **Cold pressed**

Medium chain triglycerides, butter, linseed, fish oil, olive oil, sesame oil coconut oil, ghee & copha.

FLUIDS

Water (filtered) 2 litres daily, green tea, soda water, mineral water, herbal teas. Freshly squeezed lemon and lime juice, Stevia (plant-based low-sugar sweetener) could be added to water.

CONDIMENTS

Vinegar, garlic, bouillon, soy sauce, salt, lemon juice, chili, olives, mustard, pepper, onion powder, oil and vinegar dressing, peanut sauce, chives, fish sauces.

Herbs and Spices – rosemary, thyme, bay leaf, coriander, turmeric, ginger, lemon grass.

The amino acids glycine and glycerol or xylitol can be added to food for sweetness.

FOODS TO AVOID

HIGH CARBOHYDRATE FOODS

All cereals & grains (except for specific fibre supplements)

All breads, cakes, muffins, biscuits, crackers, donuts, potato chips, bagels, pizza, rice dishes, rice puddings, spaghetti, lasagna, pasta, pastries, muesli.

Sugary foods

Soft drinks, fruit juices, honey, jam, sugar, lollies, chocolate, sherbet, jelly, licorice, milkshakes, fruit cakes, marshmallow, pancakes, syrup, muesli.

High carbohydrate vegetables

Potatoes, sweet potatoes, kumara, yams, pumpkin.

High carbohydrate fruits

Apples, apple sauce, oranges, peaches, cantaloupe, kiwifruit, fruit juices, bananas, mangoes, pears, plums, prunes, raisins, dates, pineapple, grapes, nectarines, watermelons, berries.

SUGGESTED MENU (Find more recipes by Googling 'ketogenic diet recipes' and 'low carbohydrate diet recipes')

Breakfast Omelette with mushrooms, shallots, spring onions.

OR

Poached eggs with fresh tomatoes & onion seared in extra virgin olive oil
½ cup plain yoghurt served with ¼ cup fresh berries.

Snack Protein shake – whey powder, LSA (from health food shops, includes ground linseed, almond and sunflower seeds) soy milk, fresh fruit (from the list) **OR** a boiled egg,
OR a handful of nuts (macadamia, peanuts) **OR** vegetable sticks and hummus/guacamole.

Lunch Fresh garden salad served with oven roasted chicken, feta cheese and cashews.

OR

Steamed tuna fillet served with rocket lettuce, cucumber & red/yellow capsicum; drizzle with lemon juice & olive oil dressing.
1 cup green tea.

Snack As above

Dinner Grilled salmon with spinach, onions, zucchini, carrot.
OR Organic beef or chicken served with steamed vegetables.
OR Stir-fry tofu and vegetables (from the list).

