The purpose of this guide

We hope this guide will provide some useful guidelines for sufferers from Aspergillus related illnesses, their families and anyone who would like to know more about the impact of nutrition on Aspergillus disease.

Nothing contained in this leaflet is intended to be any form of medical advice and must not be taken, or relied upon, as such. Individuals must seek all such advice personally in relation to their particular circumstances.

Nutrition and the immune system

Main considerations

Maintain a healthy weight for your height. This is often expressed as Body Mass Index (BMI) or weight in kilograms over height in metres squared eg 60Kg person, 1m68 tall, BMI= 60 divided by 2.82= 24. A BMI between 20 and 25 is healthy, lower than this and you may be underweight and undernourished, over this you are likely to be overweight. Being seriously underweight (BMI 16 and below), or significantly overweight (BMI of 31 and above) can weaken the immune system.

Vitamins and minerals are essential in boosting your immune system. Have a good intake of vitamin and mineral rich foods: colourful fruit and vegetables, wholegrains, eggs, meat, fish. Frozen vegetables are also high in vitamins.

Avoid foods which are more likely to cause poisoning:

1 Cook eggs well. Avoid undercooked/raw eggs, eg: in home made mayonnaise and mousses.

2 Cook meat well especially chicken – there should be no pink juices running out of the roast before you eat it.

3 Eat all foods within best before date.

4 In your fridge, store meat and poultry well away from food which will be eaten raw, eg: keep cheese, puddings away from raw meat.

5 Also beware of unclean/unkempt looking cafes/take-aways/restaurants: bad signs are visible litter, dirty tables, staff handling food and money without washing hands/wearing gloves, cold food served lukewarm. Good signs are hygienic looking premises, food hygiene certificates on wall, staff not handling money and food, any hot food containing trays finished before more food is added, high turnover of customers (food is less likely to be kept over for the next day).

6 See also the Food Standards Agency website (www.food.gov.uk) for more useful information on food safety.

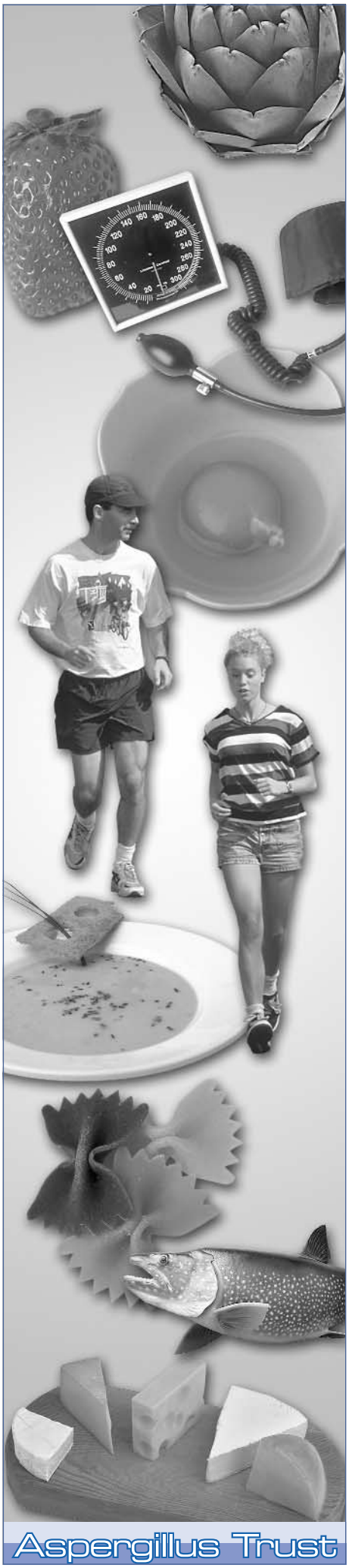
Exercise has been shown to boost the immune system in a variety of disease states. A regular exercise routine may help, even relatively gentle activity can be beneficial: walking, gardening, cycling, swimming.

A guide to

Nutrition and Health

Aspergillus fumigatus

Aspergillus Trust



Diet and your energy levels

Energy is linked to many interrelated factors: emotions, sleep levels, exercise and diet can all contribute. Where diet is concerned it may help to bear in mind the following:

- Regular meals help maintain even blood sugar levels and therefore a constant supply of energy. Also aim to have a breakfast consisting of a source of protein (eggs, baked beans/yoghurt) and of starch (porridge/toast) as it seems that by mixing these two nutrients, better energy levels are maintained. Main meals tend to naturally consist of a mixture of the two e.g jacket potato (starch) and baked beans and cheese (protein) or a sandwich with some form of protein filling (egg/cheese/meat/fish).

- Maintain even sugar levels: by not going for more than 3-4 hours without food, and avoiding high sugar foods. There is growing interest in the Glycaemic Index (GI) of different starchy foods (the amount of insulin released as a result of eating a particular food). The higher the GI, the more insulin is produced, sugar levels drop and this can result in fatigue. Choose low GI foods where possible: wholemeal /wholegrain bread (not white), wholegrain /Basmati rice (not plain white), al dente pasta, jacket potato (not mash). Having a starchy food with a source of protein can also lower its GI so for example have a jacket potato with tuna, bread and ham sandwich.

- Drink fluids throughout day, you need about 3-4 pints or 1.5-2 litres per day. This should not all be taken as caffeine/sugar containing drinks.

- Again, regular exercise can help boost energy levels.

Diet and steroid therapy

If you are on long term, or frequent steroid therapy, you may experience side effects: weight gain or sometimes loss, also weakened muscles and bones.

- To protect muscles, aim for a good protein intake (have a source of protein at each meal). Exercise will also help: walking regularly, lifting gentle weights, swimming.

- For bones, calcium and vitamin D are important. Calcium is found most abundantly in dairy foods. Three portions daily should cover most adults' needs e.g. one yoghurt, one helping of cheese and a milky drink. If you do not like dairy foods, fish with bones e.g. sardines, pilchards, whitebait, also white bread, scones, spinach are also good sources. For vitamin D, eat oily fish with bones e.g. sardines, pilchards, herrings, tuna, trout, and also vitamin D supplemented margarine (most brands are supplemented). Vitamin D is also synthesised by the skin as a result of sun exposure. 5-10 minutes per day are sufficient, on hot days make sure this is outside the peak sunburning hours of 11 am to 3 pm.

- The evidence on the benefits of calcium and vitamin D supplementation via tablets (over and above the daily recommended amount for these nutrients) for those on longterm steroid therapy is a little hard to interpret. Different studies

(done on patients with conditions such as chronic inflammatory bowel disease and asthma) draw different conclusions. If you are concerned about potential bone loss, discuss the possibility of supplements with your specialist doctor. This may be most appropriate if you do not eat calcium and vitamin D rich foods regularly.

If you are gaining more weight than you are happy with, the following could help:

- Cutting down on high fat foods. These include cheese, most puddings, pastry, meat products eg sausages and pies, chips. Have lean meat or fish, boiled/jacket potatoes, pasta, boiled rice instead and as much fruit and vegetables as you like. Chose low fat dairy foods: semi skimmed milk, low fat yoghurt, cottage/lower fat cheeses.
- Again exercise may be helpful.

Effect of different foods on blood sugar (Glucose) levels (or the Glycaemic Index of Foods)

High GI	Intermediate GI	Low GI
Glucose	Sucrose	Fructose/Lactose
Maltose	Honey	All Bran/Muesli
Lucozade	Sports Drinks	Porridge/Special K
Jelly beans	Fanta/Cola	Sultana Bran
Cocopops	Shreddies	Barley
Cornflakes	Sustain	Bulgar Wheat
Rice Krispies	Ryvita	Basmati Rice
Weetabix	Oatmeal Biscuits	Noodles/Pasta (all types)
Shredded Wheat	Shortbread*	Fruit Loaf
Brown/Wholemeal Bread	Arrowroot	Heavy Grain Bread
White Bread	Pineapple	(e.g. Granary/Multigrain)
French Stick	Papaya	Pitta Bread/Rye Bread
Brown/White Rice	Raisins	Chapatis
Waffles	Sultanas	Sponge Cake
Bagel	Squash	Banana Cake*
Crumpet	Mars Bar*	Apple Muffin*
Morning Coffee	Muesli Bar*	Low-fat Ice Cream
Water Biscuits	Taco Shells*	Milk/Yoghurt
Puffed Crispbreads	Full Fat Ice Cream*	Fish Fingers
Parsnips	Croissant*	Peanuts*
Baked Potatoes	Beetroot	Sausages*
Chips*	New Potatoes	Crisps*/Popcorn
Pumpkin	Pea Soup	Lentil/Tomato Soup
Swede		Chocolate*
Broad Beans		Apple/Apricot/Banana/
Corn Chips*		Cherries/Cantaloupe
Water Melon		Melon/Grapefruit/Grape
		/Kiwi/Mango/Orange/
		Peach/Pear/Plum
		Apple Juice/Orange Juice
		Carrots/Peas/Sweetcorn
		Sweet Potato/Yam
		Baked Beans/Butter
		Beans
		Chick Peas/Haricot
		Beans
		Kidney Beans
		Lentils/Soya Beans

* Foods containing relatively high amounts of fat – choose low fat options where available

Medical knowledge and opinion varies according to the extent and availability of research and differing assessments of such research by different practitioners.

Whilst the information contained in this leaflet has been compiled by the Aspergillus Trust from sources believed to be reliable, the Trust cannot guarantee the accuracy or completeness of such information and cannot accept any responsibility for any use of such information.

What further help is available for sufferers?

Aspergillus related illnesses are long-term conditions, and can have a negative impact on an individual's quality of life. Although medication is available, help and advice are necessary to give further support to the sufferer.

- Aspergillus Trust website **www.AspergillusTrust.org** visit us online where you can register with us and find out more about the Trust and how you can help.
- Aspergillus Trust Members Group is open to everyone, including those living outside the UK. If you would like to show your support for the Aspergillus Trust you can join here: **http://health.groups.yahoo.com/group/ATMG/**
- The Aspergillus webpages are very informative. These include: **www.aspergillus.man.ac.uk** (registration required) and a site for patients **www.aspergillus.man.ac.uk/patients**.
- Other useful websites include: **www.doctorfungus.org** **www.epa.gov/ebtpages/airindoormold.html**

To contact the Aspergillus Trust for further guidance, or if you would like to assist us in any way, please email: info@aspergillustrust.org or membership@aspergillustrust.org

Grateful thanks are given to:
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