A HEALTHY BALANCED DIET – THE A AND O FOR DANCERS.

Introduction

“Gesundheit ist nicht alles, aber alles ist nichts ohne Gesundheit”
„Good health isn’t everything, but everything is nothing without good health“
(Schopenhauer)

Today dance is a combination of art with sport; with art we feed the soul – but only FOOD can fuel the body's requirements, thereby making dance possible AND maintaining a healthy body. Talent and all that hard work which goes into the years of training can only lead somewhere if the body is respected and provided carefully with everything it needs – in other words is fed a healthy diet. Without doubt it is highly important as a dancer to maintain long slim limbs and a below average body fat level, but healthy implies providing enough of all food types for all structures of the body to function at an enormously high level and suffer no long term damage. Is it possible to balance these two seemingly opposite sides of the “Food Equation”? Even though nutrition is a most complicated issue, and although every individual is unique the answer is a resounding YES.

Methods and practices of eating

In German there is a saying “Morgens essen wie ein König, Mittags wie ein Fürst und Abends wie ein Bettler”, which means „In the morning eat like a king, at lunch like a lord and in the evening like a beggar”. This is sometimes hard, if not impossible, to carry out when working long hours or performing until late at night.

Another theory is to divide the required food into smaller portions eaten at regular intervals throughout a day. This is more practical for a dancers’ daily routine, and helps to provide a more constant level of glycogen in the muscles. This prevents tired sluggish muscles, enables fat to be burned and prevents large fluctuations in the blood sugar levels.

There are (unfortunately) no rules which everyone must follow, rather the principles outlined herein of a healthy balanced diet must be fitted to a personal regime, which works for the individual dancer.

It is always crucial to ENJOY ONE’S FOOD, and to listen to the body’s messages – messages of hunger, satisfaction, having eaten ones full – and to balance food groups as well as actual requirements. This booklet aims to provide knowledge, so that young dancers can make decisions about their choice of foods. This hands them a tool to increase their independency and self-sufficiency, and will enable a greater development of creativity and expression through healthy growth instead of preventing goals being achieved.

Nutrition plays a massive role in the development of a dancer during training, and it is probably true to say that bad nutrition has played a large part in preventing a large number of otherwise promising careers - no body can grow, strengthen and recover after injury with depleted essential nutrients. Also long term damage to a dancers body will be caused by years of continuing punishing schedules whilst simultaneously depriving the body of its’ daily needs (e.g. osteoporosis, prevalence of chronic injuries, amenorroeoa and low morale).
The Dance UK’s “Healthier Dancer Programme” consulted over a thousand dancers in a large survey, and results revealed 16% of dancers had experienced an eating disorder in the last 12 months, and 25% had suffered such a disorder at some point in their career.

As specific nutritional advice for dancers is generally hard to find, it is inevitable that dancers follow unsuitable regimes to follow the goal of low body fat – whilst paying no attention to a balanced and healthy diet, and therefore seriously endangering their strength, skill and future state of health.

**Essential elements of daily intake**

These are water, the three macronutrients (carbohydrates, proteins, fats), fibre, vitamins and minerals.

**Water**

Human life as we know it developed from water, and it is water that still controls our bodily processes. The brain is 70% water, 82% of blood is water and 90% of the lungs is water. In total, 2/3 of our bodies is water. Water carries nutrients into and out of each and every cell, it is vital for all chemical processes in our bodies and it controls our body temperature.

If we lose just 2% of body weight in fluid, the effect on performance can be dramatic. When we feel thirsty, we are already partly dehydrated! The results of dehydration can be enormous: poor muscle tone, joint and muscle soreness, cramps and a sluggish metabolism (with associated weight maintenance problems).

We lose water when breathing and sweating, and by urinating and defecating. We take in water not only by drinking, but also from eating. Fruit and cooked grains for example are great sources of water, as they also contain electrolytes (Magnesium, Calcium, Potassium etc.).

When dancing (exercising), our temperatures increase, and water is needed to dissipate this excess heat. This happens by sweating and by breathing deeper and faster, thereby expelling water in the form of moisture. Most of this water comes from the blood, and this leads to the blood becoming more concentrated. This places extra demands on the heart and lungs, which gradually makes exercising more difficult. Even when only minimally dehydrated every biochemistry step in every single cell will be running sub optimally, so we could summarise this:

- **Exercise → Temperature rises → water used up → performance suffers**

If however we sip small amounts regularly, the body remains hydrated and performance can be maintained. Waiting till after exercise periods then drinking large amounts does not have the same positive effect on performance. Firstly, the kidneys want to expel any sudden large amount of fluid, and secondly the dehydration has already happened during the exercise period.

What is a healthy or recommended daily intake of water? This is a sensible, but difficult, question to answer. It depends on age, sex, height, amount of exercise, amount of salt in the diet and many more factors. (The more we sweat, and the higher the level of salt in our diet, both increase our daily requirement of water). A rough guideline would be 500ml to 1 litre per 25kg of body weight; or 2 litres per day.
Are isotonic drinks necessary? No, as we learnt above – fruit and some foods contain water WITH minerals and electrolytes, which is all that is in expensive drinks. A further advantage of choosing the natural option, is that bought drinks often have chemical colouring and preservatives in.

**Carbohydrates**

All energy is passed from one form to another, it cannot be destroyed or lost. Energy can be light, or heat or other sources. Energy could be translated as “ability to do work”, and work can be done by any of these forms of energy. In food, energy is measured in kilojoules (kJ) and often written as kilocalories (kcal) on food labels, often one speaks of simply “calories”.

The energy we need to fuel our bodies is provided by the sun which becomes glucose in plants. This glucose is then used by every cell in our bodies, from nerves to connective tissue cells to muscles. This means not just for the demanding tasks of growing and dancing, but for maintaining body temperature, fighting infections, rebuilding and repairing cells, feeding the brain, driving the process of breathing, enabling the heart to pump blood continually around the body and of course for all muscular activities. In some cases our cells can use fats as an alternative form of fuel – but the brain can only use glucose as its’ fuel. Even when resting we need high amounts of fuel for all the processes essential to life. Figures differ hugely, but a guide is that if a 30 year old woman were to lay on the floor for 24 hours, she would still need 1600 kcal. This figure increases whenever we exercise, and also significantly more during times of growth (N.B. Teenagers, after injury).

The body needs glucose, the simplest sugar form, but not all food contains sugar in this form. Other forms are so-called complex carbohydrates, which are chains of many sugars attached end to end. These complex carbohydrates (found as starch and fibre) must be broken down to release the glucose within. This happens during digestion, and then the glucose is absorbed through the intestine wall. From here it is transported via capillaries to the blood stream, and thence to every single cell. The pancreas produces Insulin, which tells cells to send a transporter to their cell wall, in able to grab glucose from the passing blood into the cell. In other words:

Eat → Digest → Pancreas registers glucose increase in blood → Pancreas produces Insulin → Insulin tells cells to prepare to grab fuel → Cell prepares itself → Cell grabs sugar from blood → Cell can function

If we eat food high in glucose content (plain sugar or simple carbohydrates), there will be a very sudden large amount of glucose in the blood, known as a “sugar spike”. Then the pancreas produces massive amounts of Insulin, the cells grab massive amounts of glucose out of the blood, and we are left with the danger of hypoglykaemie (a life threatening situation where the body simply doesn’t have enough sugar available= under sugared).

Therefore it is better to eat slow release carbohydrates, or complex carbohydrates, then the pancreas releases Insulin gradually over a much longer period of time, providing the body with fuel for a much longer time span. This is not only useful but much healthier. The slow release happens because it takes time for the digestion to release glucose from the complex carbohydrates.

Generally, processed food contains high amounts of simple carbohydrates (glucose), and unprocessed foods deliver the healthy slower constant delivery of required glucose from their complex carbohydrates. Examples of these foods are brown pasta, bread and rice, nuts, fruits,
vegetables, whole grains, legumes, seeds. Not all food types contain either simple or complex carbohydrates, some contain a mixture of both.

Preparing for class/performance

Make sure the body is well supplied with carbohydrates by eating a meal 2 to 4 hours before training/performing. This will make sure of all the benefits listed below and prevent a feeling of tiredness with its’ usual negative effects on technique control – and therefore higher risk of injury:

- Wholegrain cereal, with skimmed milk/low-fat yoghurt
- Porridge with skimmed milk and handful raisins
- Sandwich/pita/bagel/roll/wrap with sliced chicken, fish or egg (use low-fat cheese instead of butter)
- Jacket potato with beans/tuna and tomato sauce/chicken/cream or cottage cheese. No butter
- Pasta with tomato sauce, grated low-fat cheese and vegetables
- Stir-fry (chicken/quorn/tofu/prawn) with vegetables and noodles or rice
- Fish and potato pie
- Bean hotpot with rice
- Couscous with lemon chicken and vegetable

If time is short, and the body is in need of fuel (before a performance or between rehearsals) a pear with a few walnuts is infinitely better than a chocolate bar. Other ideas for 30 minutes to 2 hours before dancing:

- Fresh fruit
- Dried fruit
- Diluted fruit juice
- Smoothie
- Cereal bar/energy bar
- Low-fat yoghurt
- Fruit loaf/raisin bread
- Handful mixed nuts and fruit

Also, avoid foods with only carbohydrate content, because the digestive process is easier and therefore quicker than when carbohydrates are mixed with protein and fat. This quicker process leads again to the “sugar spike” and the dangers described above.

During class

If class is particularly high intensity, or a longer class of moderate to high intensity, then glycogen stores will be used up, and typical tiredness and sub-optimal performance are the results. It is possible to keep glycogen topped up, by drinking isotonic drinks, or eating mini-snacks such as raisins, energy bar, dried fruit. If you choose to eat, then you must also drink something.
After class

Refuelling is most important after class. Glycogen must be restocked, and generally the sooner the better (up to 2 hours is the accepted rule). Here are some ideas for directly after class (see also “Proteins”):

- Yoghurt
- Fresh fruit, with glass (semi-)skimmed milk
- Yoghurt drink
- Sports bar (must contain both protein and carbohydrates)
- Sandwich/Pita/Roll/bagel with lean meat/poultry/egg/tuna
- Meal-replacement shake
- Jacket potato with tuna/baked beans/grated low-fat cheese
- Bowl healthy cereal with (semi) skimmed milk

➤ Reasons that carbohydrates are important for the dancer:
  - Stocks up glycogen stores in the muscles, as energy for peak performance
  - Helps burn fat
  - Prevents the body from using muscle as a source of energy
  - Provides B-Vitamins to boost metabolism
  - Prevents fatigue and heavy muscles
  - Prevents injury caused by exhausted muscles and vulnerable joints/ligaments/bones

➤ Carbohydrates should make up roughly 50-60% of a dancer’s diet. To do this, ensure that every meal or snack contains carbohydrates, making sure that about 1/3 of the plate is made up of a carbohydrate rich food (potatoes, couscous, pasta, rice, grain etc.).

➤ Without adequate glycogen stores when exercising, the body cannot burn fat. To continue exercising, the body must turn to an alternative form of energy – protein. The most easily available protein is muscle itself, so without enough carbohydrates the body destroys its own muscles. A further result is then that the metabolic rate is reduced, because less muscle needs less calories.

➤ Fibre is a complex carbohydrate, which is either soluble or insoluble. Insoluble is completely indigestible, but is important to maintaining healthy bowels and to fill out foods – which helps in weight control. Soluble fibre also adds bulk to food, but is gentler on the digestive system. When increasing fibre in the diet, be sure to increase your intake of fluids.

➤ Restock on carbohydrates within 2 hours of training.

Proteins

Proteins are made up of building blocks of amino acids, of which there are 20. They are obtained in the body by digesting the protein in food we eat, releasing the individual building blocks and then using them to build the chemicals we need (to build body tissues, antibodies, transport molecules...
and hormones etc.). Our bodies can produce 12 of these itself (known as “non-essential” amino acids), and the remaining 8 must be provided by our diet (these are the “essential” amino acids).

These essential amino acids are separated from long chains of amino acids in food, and the individual “building blocks” are taken from the digestive system to the liver, where they are sorted and either kept or expelled. This recycling system works so well in fact that our protein intake is actually much less than we sometimes expect it to be. A guide is:

1,2g-1,6g Protein per kg body weight  (55kg dancer; 55x1,2 = 66g  and 55x1,6 = 88g. Daily protein requirement = 66-88g).

➢ ! A dancer on weight reducing plan should ensure 1,6-2,0g protein/kg body weight. This ensures weight loss is due to fat reduction rather than muscle reduction.

Animal products are a high source of protein and provide all 8 essential amino acids, but also plants provide us with protein. Soya for example provides all 8 essential proteins. Other plants provide some of the essential amino acids including pecans, walnuts, black beans, pinto beans, quinoa, millet, brown rice and oats. It is important as a Vegetarian to combine ingredients to ensure a balanced source of all 8 essential amino acids.

Modern evidence does not seem to show that too much protein is damaging – but when this protein is from animal sources, one should seriously consider the fat content (particularly the saturated fats – see below).

After exercising it is vital to restock on carbohydrates (as we have seen above), but also on protein to help the recovery of tired muscles. Combining protein and carbohydrate in a post-training snack helps to maintain optimal glycogen levels AND well cared for, lean, elegant muscles. (See refuelling examples in “After Training”).

| Protein content (dried substance) |
|-------------------------------|----------------|----------------|
| Over 30%          | 30%-9%        | Under 9%       |
| Fish              | Vegetables    | Fruit          |
| Meat              | Bread         | Potatoes       |
| Cheese            | Cereal produce| Carrots        |
| Quark             | Mushrooms     | Honey          |
| Eggs              |                |                |
| Soya              |                |                |

(nach Dr. Roelen)

**Fats**

Fat is used in our bodies to make cell walls, promote healthy joints, insulate nerves, make the structure for the brain, help absorb vitamins and minerals, aid a good working immune system, promote healthy skin and nails, store energy for hard times, maintain body warmth, make hormones, increase the sensation of taste and to make us feel full. This last function is important as part of the finely tuned balance of eating enough for our needs, but maintaining a constant weight. Adding good quality fats to cooking helps reassure the brain that the diet is wholesome, and helps to increase the
metabolic rate – the rate of energy expenditure. The higher the metabolic rate is, the quicker all chemical reactions in the body take place, helping preventing sluggishness and weight gain.

Too much fat (or an excess of kcal intake) in the diet can be stored by the body. Fat can be stored under the skin (when the individual is overweight), but also healthy looking individuals can be storing fat – in the arteries and organs, where it can lead to serious health problems.

Too little fat can also lead to health problems:

- Flaky skin or eczema
- Cold extremities (because the body tries to preserve heat)
- Hormonal imbalance, and loss of menstruation
- Poor control of inflammation and blood pressure
- Greater risk of injury, slower recovery from injury
- Inability to absorb vitamins A, D and E
- Greater risk of osteoporosis

Fats provide more than twice as much energy as carbohydrates and come in a variety of forms.

(1g Carbohydrate or protein provides 4kcal; 1g fat however provides 9kcal).

Saturated fats are mostly found in animal produce, but also coconut, palm and cocoa oils. The animal fats have been linked to a range of negative effects on the body such as cardiovascular disease, high blood pressure and increased cholesterol levels.

Unsaturated fats are divided into two groups – monounsaturated fats (MUF) and polyunsaturated fats (PUF).

Monounsaturated fat is found in nuts, seeds and oils; the most important of these is olive oil. It has been named “the healthiest fat”, and this refers first and foremostly to cardiovascular health.

Polyunsaturated fats are mostly found in vegetable oils (e.g. sunflower oil). The most important PUFs are the Omega oils (Ω-3 and Ω-6 – also called essential fats because the body cannot make them) which are found in mackerel, salmon, fresh tuna, sardines, anchovies and kippers. They are also found in linseed oil, walnuts, soybeans and pumpkin seeds. They provide anti-inflammatory protection (preventing strains on joints, ligaments and tendons), reduce inflammation associated with over-training, promote healing of injuries, improve delivery of oxygen and nutrients to cells, and increase stamina and energy levels.

Although vital in a balanced diet, fat should not make up more than 25% of the diet. But this doesn’t mean 25% of each plate full should be fats! Only 25% of the total calories should come from fat in the diet, and because fat provides more kcal per gram we need a lot less of it than the other macronutrients.

(2000kcal daily requirement; 25% from fat = 500kcal. 500/9=56g of fat.

For carbohydrates, 60% = 1200kcal. 1200/4=300g of carbohydrate.)
Vitamins

All vitamins are essential in small amounts ("vita" = "life" in Latin). They cannot be made in our bodies (with the exception of Vitamin D which we produce when the skin has exposure to sunlight). This means we must maintain a healthy balanced intake of vitamins through our diet.

They are needed for many finely tuned processes including hormonal, nervous and immune systems; also for muscle contractions and for forming enzymes which (for example) build protein and break down fat.

Vitamins A, D, E and K are water-soluble and can be stored to a certain extent in the body, which means that daily consumption is not necessary. The B-Vitamins and Vitamin C are fat-soluble, and must be present in our diet daily as they cannot be stored. Any excess of these water-soluble vitamins will be excreted in urine. They are more delicate than fat soluble vitamins and can be damaged or lost in cooking.

Many vitamins are also antioxidants, which act as counterparts to free radicals. The latter are produced by the body, and have been shown to cause or play a role in cancer, heart disease and ageing - as well as major problems which affect dancers’ performance such as muscle pain, swollen tissues and chronic injuries. When exercising, the amount of free radicals released in the body increases, another reason why vitamins (as well as minerals) are vital.

<table>
<thead>
<tr>
<th>Vitamin</th>
<th>Function and Sources</th>
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<tbody>
<tr>
<td>Vitamin A</td>
<td>Growth of all tissues, healthy vision</td>
</tr>
<tr>
<td>Vitamin B Family (B1-12)*</td>
<td>Many chemical reactions, healthy skin/hair, breaking down macronutrients from food</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>Vital for cross-linking collagen molecules (I strengthening bone/muscle/tendons and repairing after injuries!). As an anti-oxidant it also prevents damage to the above structures. Helps absorb iron from food.</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>Bone health</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>Protects cells from oxidative damage (by “free radicals”)</td>
</tr>
<tr>
<td>Vitamin K</td>
<td>Regulates blood clot formation and helps bone building</td>
</tr>
</tbody>
</table>
*The B-Vitamins:

- B1 thiamine
- B2 riboflavin
- B3 niacin
- B5 pantothenic acid
- B6 pyridoxine
- B7 biotin
- B9 folic acid
- B12 cyanocobalamin

Minerals

These are chemicals which we need in tiny amounts, but these tiny amounts are essential for optimal performance. They make chemical reactions possible and are very important for signal sending within the body, therefore play a huge role in the metabolism as a whole. As with vitamins, they must be provided in our diet as our bodies cannot produce them. Examples are Calcium, Magnesium, Phosphorus, Potassium, Copper, Selenium and the general rule is to eat a wide range of everything! To free the minerals from the food we eat, we must have a healthy stomach acid. One simple way to restore healthy stomach acid is to eat oxidized apples occasionally. To do this, simply grate an apple and wait for it to turn brown before eating. An alternative method is to use apple cider vinegar for dressings.

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Function</th>
<th>Deficiency</th>
<th>Source</th>
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<tbody>
<tr>
<td>Iron</td>
<td>Found in every cell, makes red blood cells (which transport oxygen)</td>
<td>Lack of energy, headaches, dizziness, shortness of breath</td>
<td>Liver, red meat, beans, nuts, dried fruits, brown rice, dark leafy vegetables</td>
</tr>
<tr>
<td>Calcium</td>
<td>Bone and teeth structure, nerve function, muscle contractions</td>
<td>Osteoporosis</td>
<td>Dairy products (content just as high in low-fat alternatives), green leafy vegetables (but not spinach), fortified soya</td>
</tr>
<tr>
<td>Zinc</td>
<td>Metabolizes macronutrients, produce enzymes, healthy immune system, healing wounds</td>
<td>Weak immune system</td>
<td>Meat, shellfish, cereals, dairy products, beans, yeast, nuts, seeds, pumpkin seeds</td>
</tr>
</tbody>
</table>
When time is short

When only 20-30 minutes remain before a class or performance, it is still not too late to eat something. To ensure optimal performance, the fuel must be available for the bodies needs. Here are some examples of nutrient packed, energy rich easily digestible snacks:

- Walnuts and pear
- Banana and almonds
- Plain yoghurt
- Hummus and pita/carrots
- Dried fruits
- Baked pumpkin seeds
- Almonds/pecans/granola/walnuts
- Almond butter on tortilla, rolled:
  - + cinnamon
  - + grated carrots/parsley
  - + pesto
  - + watercress

Stress

Stress is normal. This is sometimes forgotten, but think of rushing to meet a friend or your feelings before an exam. These are temporary states of affairs, and are necessary parts of our lifes. If we are unhealthy, stress affects us much more than when we are fit. This is why peace and calm is important when the body is fighting to recover from an injury – a state of agitation only turns the body’s attention away from the processes of rebuilding and recovering.

If a stressful situation or state of affairs becomes chronic it turns to negative stress, which then not only prevents recovery, but will damage our health.

Therefore it is imperative that we learn how to deal with stress. The basic rule is Recognition, Action, Reduction.

This means we need not only to know the signs of when we are stressed, but to know what to do to alleviate the stress. Here Anti-oxidants in our diet play a role in decreasing stress initiated damage to our tissues. The following components are very helpful in this respect:

- Copper: hazel/peanut/pecan/walnut, seeds, whole grains, beans, meats – especially lamb
- Zinc: pumpkin seeds (++), beef, whole grains, beans, brasil nuts/pecans/cashews, oats, sunflower/sesame seeds
- Selenium: brasil nuts (++), wheat, corn, rye, eggs, soya beans, sunflower seeds, mushrooms, most meats, fish
- Iron: lentils (red), kidney beans, peas, green beans, beets, corn, brown rice, plums, walnuts, black currants, parsley, cress, molasses, chicken, fish, eggs, whole grains
- Vitamin C: most fruits, citrus (++), dark green vegetables
- Beta-Carotene: yellow and orange fruit and vegetables - carrots, mangos, sweet potatoes, peaches
Ω-3 salmon, mackerel, herring, walnuts, almonds, green leafy vegetables, pumpkin, chestnuts

Also:

- Berries (the darker the colour, the higher the Anti-oxidant level);
- Allium family (onions, leeks, chives, garlic);
- Green and white teas
- Dark chocolate (> 70% is better)
- Cruciferous family (broccoli, cabbage, cauliflower, brussel sprouts)

A balanced mix of all these components helps to balance our hormones and chemical reactions, and plays an essential role in weight control as well as helping to reduce stress.

Other factors which reduce stress are exercise and sleep.

Sleep

Sleep is absolutely vital for all humans, and is something wonderful and marvelous, as Cervantes wrote in “Don Quixote”:

Sancha Panza : “When I sleep I have no fear ... nor trouble...”

Without sleep, we cannot recover from the day, we cannot build back up the reserves used during the day and injuries do not heal. For growing Teenagers, sleep between 10pm and 2am is especially important, as GTH (growth hormone) is most active during this period. But also tissue repair is controlled by GTH, so this time slot is important sleep time for a healthy body at any stage of life.

The better rested we are, the healthier we are, the less stressed we are and the better the condition of our tissues. This means that with better sleep we are more ready to face each new day and are more capable of a higher work load.

Sleep after a busy day and hard work can be difficult. The solution is NOT smoking or alcohol – these actually raise stress levels and make getting to sleep more difficult, and less effective.

The following can be an aid to tuning the body slowly down, to prepare it for quality sleep:

i) Deep breathing; visualizing the path breath takes; listening to the body to all that happens during breathing; lengthening the breathing cycle.
ii) Release the jaw muscles either by facial massage or by visualization
iii) Releasing the facial muscles, see (ii)
iv) In stress situation pause, take step back, breathe and find a positive sentence. Regain perspective.
v) Laughter!
vi) Never squeeze 45 minutes of work or jobs into a 30 minute break.
Healthy tendons

Tendons are the structures that link muscles to bones, and during dance they are placed under maximum pressure while being used throughout the whole range of movement. Therefore their perfect condition is essential for optimal performance.

Dietary tips for healthy tendons:

i) Increase Ω-3
ii) Decrease Ω-6
iii) Ensure that the following vitamins and minerals are included in your diet:
   Vitamin C, copper, zinc, iron, folate, B12 (mainly in meats), B6 (raw fruit and vegetables)
iv) Stay hydrated
v) Foods that function as natural Anti-inflammatory aids:
   Ginger, garlic, fresh rosemary and thyme, cayenne, cinnamon, cardamom, pomegranate
   Rye, quinoa, millet, amaranth, brown basmati rice

Healthy muscles

Without healthy muscles, our bodies just wouldn’t be able to dance. Ensure that the following are included in a balanced diet:

i) Folate, B12, B6, Anti-inflammatory foods
ii) Magnesium, selenium, Vitamin D

When muscles feel tired and sluggish, try the following:

i) Quick fix – water plus some dark juice (pomegranate, black cherry)* Option- add a pinch of salt (Himalayan is the purest)
ii) Reduce coffee intake

*This is a homemade “Gatorade”, an Isotonic drink, with the benefit of vitamins and minerals, but without the added sugar, artificial colouring or additional chemicals.

Bloated feeling

If you feel, or feel to look, bloated, it can be useful to ask yourself the following questions:

i) Are you eating too quickly?
ii) Are you chewing each mouthful enough?
   Both the above result in larger chunks of food being swallowed, which leads to undigested material travelling on into the small intestine. The result is that water is attracted into the small intestine, which is the state of being bloated.
iii) Am I only drinking large amounts with each meal, instead of taking regular sips throughout the day?
iv) Try restoring the acid environment in the stomach – grate an apple, wait till brown then eat.
Weight maintainance

Naturally, all dancers are (hyper-) aware of their body weight. This sometimes leads to the case where, in order to reduce weight, the dancer reduces food intake. As we have seen above, the result is a disturbance to the carefully balanced equation of intake = fuel for performance. With too little intake, there is too little fuel available for the body’s needs, and performance suffers.

However, it is more complicated than that. Normally, when cutting down intake, and maintaining workload, the body slows down its’ metabolism in order to restore the balance. This involves slowing down all bodily functions too, so not only is top level performance while dancing negatively affected, but all repair and growth processes too are slowed down. As an added complication, the body tries desperately to store reserves. This means it actually tries to build UP fat (and other) resources, or protect the reserves it has. In order to do this, it must find alternatives to food intake. The easiest available tissues to misuse as an alternative energy form, are muscles. So the body devours its own muscles – the very tissues that have been built and strengthened with so much hard work in the studio. The results are obvious – less power, technique goes downhill, even less ability to burn calories (because muscles are the furnaces of the body), and the metabolism slows down even more.

This downwards spiral is damaging, counterproductive and most unhealthy. It must be stopped.

The answer is to restore healthy eating. This necessarily means eating more, but with careful thought to ensuring a balanced diet. Weight will go up first, then stabilize before reducing again. Most importantly, it is the solution for a future with a functioning, healthy resilient body.

On holiday

Naturally it is important to rest on holiday – that’s what it’s there for! But it is also vitally important for the joints and other structures to move every day too. This can be as simple as walking, or hiking, or else biking, swimming, jogging or running (if you’re used to it), pilates, gyrotonics, fitness or yoga.

Do still eat three meals a day, but as you will not be dancing the fuel requirements are obviously reduced. This means that snacks become then unnecessary. But maintain the balanced, healthy diet!
DO’S AND DON’TS

- Don’t skip breakfast
- Try to avoid refined sugar
- Try to avoid fast food
- Try to avoid ready-made meals
- Reduce coffee intake
- Reduce Ω-6 intake
- Don’t smoke
- Don’t drink alcohol in excess
- Do stay hydrated
- Do eat a wide range of foods from all food groups and of all colours
- Do refuel after work
- Do have suitable snacks (see “On the Go”)
- Increase Ω-3 intake
- Balance the intake of all 6 food groups
- Reduce stress

Spices, Herbs and their Benefits

Cinammon: regulates blood sugar, tones smooth muscles, anti-inflammatory
Cardamon: enhances calcium absorption, mild anti-inflammatory
Cayenne Pepper: Anti-inflammatory, increases circulation, assists digestion
Turmeric: Powerful anti-inflammatory, anti-bacterial, anti-viral, enhances iron absorption, regulates blood sugar
Cumin: warming effect, assists digestion
Mustard seed (brown/yellow): assists digestion, increases circulation, helps breathing during cold
Rosemary and thyme: Anti-inflammatory
Oregano: powerful anti-oxidant, boosts immune system, good for stuffed up nose
Basil: Anti-oxidant
Ginger root: Anti-inflammatory, digestive aid, reduces bloating, aids recovery from sore muscles
Peppermint: good for stomachs and headaches
Amalaki Powder (Amla): powerful anti-oxidant (good when injured or under stress, helps increase bone density, assists digestion
Chamomile: Relaxing, aids sleep, assists digestion
“Healthy” foods to watch out for

Margarine  Very processed, lots of chemicals
Bought salad dressings  High in sugar content
Bought fruit juice  Often added chemicals

“Brown/whole grain” bread  Often white flour, coloured with caramel (sugar!). Wheat allergies? Genetically altered wheat?

Phytosterols  Made to reduce cholesterol levels, but maybe themselves harmful

“Low fat foods”  Fat taken out (often chemically), and tastelessness solved by adding sugar

Sports drinks  Isotonic yes, to replace nutrients, but often with huge levels of added sugar

Agave nectar  Is made from 70-90% fructose

Junk food  Is exactly that – junk. Processed, added chemicals, health value = NULL. Even if sold as “health snack/vegan snack/gluten free snack..”

Health bars  Check ingredients – often loaded with chemicals and sugar

Brown rice syrup  glycemic index <98% - virtually pure sugar of the worst kind for the “sugar spike” problems

Oils  ?? Sources vary massively – but all are agreed on one good option, olive oil

Cereals  Check packaging for details, remember low fat is often high sugar, look out for chemical additives and for refined versions of real foods.
**Acid and Alkaline foods**

Foods have an acid or alkaline effect inside the body, which is not directly relative to their pH value before being eaten. Too much acid producing foods can prevent swelling from being absorbed, can make infections worse and can rob the body of protein and/or minerals stored in the bones.

These results are far reaching for a dancer, and the following list of acid producing and alkaline producing foods is highly important.

<table>
<thead>
<tr>
<th>Add acid directly to the body</th>
<th>Meat and meat products, cows’ milk produce, especially cheese, hens’ eggs, nuts, especially peanuts, cereals, brussel sprouts, asparagus, pulses, vinegar, mustard fizzy drinks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Produce acid in the body and rob the body of alkalines*</td>
<td>Sugar, all sweeties, white flour, margarine, white and grey bread, processed rice, coffee, black tea (when brewed less than 5 minutes), sugary lemonades, coke, sweetened fruit juice, alcohol</td>
</tr>
<tr>
<td><strong>Neutral foods</strong></td>
<td>Wholemeal cereals, rye, wheatgerm millet, green beans, fresh peas, fresh butter, cream, water</td>
</tr>
<tr>
<td><strong>Foods that produce alkalines in the body</strong></td>
<td>Potatoes, other vegetables (apart from brussel sprouts, asparagus), tofu, soya beans, fresh fruit, dried fruit, freshly squeezed juice, mushrooms, raisins, almonds Mineral water without gas</td>
</tr>
</tbody>
</table>

*The body uses alkalines stored in the body to neutralize this acid by using minerals from bones – with the results of damage to teeth, joints, spinal discs and osteoporosis. G. A. Ulmer cites H. Bircher-Rey as calling white flour, white sugar and saturated fats “The Alkaline Robber Trio”.

Excess acid that is not excreted can be stored in the muscles, tendons, body tissues, nerves, bones and organs.
Summary so far:

i) Carbohydrates provides fuel for all processes in the body

ii) Good quality fats are vital for healthy bodies, especially Ω-3 (e.g. good functioning nerves)

iii) Protein is needed to construct strong body structures

iv) Eat real food, rather than processed or chemically enhanced food, preferably freshly prepared

v) Eat the widest variety possible, including all colours (fruit and vegetable), nuts, seeds legumes and grains. “5 a day” is a good guide to minimum requirements.*

vi) Recommended portion sizes for sufficient protein, without unnecessary saturated fats:
   - Meat – 60 to 120g
   - Dairy – 180 to 240g
   - Cheese – 30 to 60g.

*”5 a day” refers to eating 5 differing fresh products every day, in a wide range of colours. Each portion should be roughly what one can hold in one hand. This makes around 600g of food, of which up to half should be eaten raw.

Matthew C. Squire, PHfT, December 2014.

References  “Healthy Eating”


http://www.fitness.gov/eat-healthy/how-to-eat-healthy/

http://www.nhs.uk/Livewell/Goodfood/Pages/eight-tips-healthy-eating.aspx