SNOWLAND CHILDREN FOUNDATION

Food Pyramids are since about 50 years in various countries in the world around. The first, rather simple version, was developed by the Swedish author of cookery books and a quite engaged woman for protecting consumers, Anna Britt Agnsäter. It was based on the first recommendation for foods in the USA during the 2nd world war. Meanwhile, we know about 96 countries in the world, where health authorities are publishing special recommendations for the consumption of certain foods. Those recommendations vary from country to country according to their local habits. In addition to the most frequently used "Food Pyramid" we also find pagodas, palm trees, skyscrapers, turned-down gyroscopes (spinning tops) or fans. In Germany and France they also have the so-called Food-Plate wh is quite common there (besides the pyramid).

Food Pyramids (and all other shapes) are meant to explain how local food habits and traditions as well as local food availabilities can be put in a good context for increasing health in normal daily life. They offer an easy way for eating qualitatively and quantitatively in a balanced manner. In this context, they are based on **the 4 main categories: carbohydrates, protein, fats, as well as minerals, trace elements and vitamins.**

The 6 layers of the pyramid are getting smaller and smaller towards the top. This demonstrates the QUANTITY of consuming those categories of food and NOT necessarily the QUALITY of the main ingredients of this special layer.

The **TOP of the pyramid** combines those foods that are more "rewards" and not really necessary for a balanced nutrition. Those should be eaten in small quantities, with lots of pleasure and not just while TV-watching, on the go or with other occupations. They are meant for real enjoyment and can be sweets like chocolate, cookies, candies etc. or salty treats like chips, flips, etc or drinks like Soft Drinks, Energy Drinks, etc.

The order of the levels below are NOT chosen because of their importance in a balanced nutrition, but for their quantitative importance. This is an important fact for understanding the principle of the Food Pyramid. Some foods belong in 2 layers as they have 2 important ingredients from 2 different layers.

The **lowest level** is mostly consisting out of liquids. Liquids don't contain any nutrients but water, the most important substance for living

As written above, the position of each level is chosen concerning the quantity of consumption, not necessarily according its importance in a balanced nutrition. The quantity of consumption goes down from the bottom to the top of the pyramid.

WHY a Tibetan Food-Pyramid?

I started in 2015 to teach nutrition in various Tibetan institutions in India, especially in Dharamsala, where HH the Dalai Lama is living since the early sixties of the last century. The beginning was in the LHA, the Social Work Centre in Dharamsala, a year later I continued in the TDH (Tibetan Delek Hospital), where I offered a Course with 10 Basic Lectures to the doctors and caregivers (I have a phD in Nutrition). From 2017 onwards we began with the Nutrition Courses "Basics in Nutrition" for the 8 Tibetan Children Villages (TCVs) in India. In those villages live about 7,500 kids between 5 and 18 years. I offered during the week of the nutrition course 10 lectures à 3 hours each, 2 per day during 5 days. And – during the last teachings in 2019 it became clear that neither the Swiss Food Pyramid nor the Indian Food Pyramid are fitting to the nutritional habits of the Tibetans respective the TCV kids:

- **Swiss Food Pyramid**
  Is existing since 1998, with several new editions and since 2019 in revision.
  At the moment, they recommend in Switzerland 3 times a day milk and milk products. That's completely unrealistic in the TCVs in India, as they are getting at most 2-3 times per week 1 glass of milk.

  Another problematic aspect is the "green and brown" level: In Switzerland, the 2nd frequent consumption after liquids are vegetables and fruits (green level) and above (so less in consumption) comes the "brown" level with "filling foods" like rice, grains, potatoes, breads etc. With this, they are trying to increase the consumption of vegetables and fruits ("5-a-day"). However, this does not at all reflect the real nutrition habits neither in India nor in Switzerland or elsewhere in the world. In general, rice is taking up half of the plate in Asia.

- **Indian Pyramid**
  Here, we found several points that we did not like at all:

  - There is no «basis» with liquids
  - The lowest layer (with the most frequently consumed foods) contains exclusively foods with whole grain and plant oils (!). Oils (even plant oils) definitively don't belong in this layer, but in the "yellow" level, just beneath the savoury products in the top. This shows a typical confusion in some pyramids: Yes, plant oils contain important even essential nutrients, but – they should be eaten in small quantities only.
  - All finely grinded grain products and even potatoes are placed at the top of the pyramid, together with savoury products. This reflects a "wishful thinking" to get people to eat more of the whole grain products, but this is definitevely not reflecting any reality! And – Tibetans put potatoes (Indians actually too) into the group of vegetables. In addition, potatoes contain not too little of very high-quality proteins!
  - Milk products can be found in the 2nd highest level, above the protein level in a separate level. They are recommended to be taken once or twice a day, which goes well with our recommendation too (twice a day). However, they also recommend multi-vitamin-pills for almost all people and Calcium-tablets for people who don't drink milk. This would be rather recommendable for our TCV-kids too, but – unfortunately – this is out of cost reasons completely unrealistic. In addition: Nowhere in the world exist those recommendations in connection with a Food pyramid.

Together with the Scientific Committee of the TCV Chauntra and Mrs. Kalsang Sharling, the former Director of the Mother's Training Centre of all TCVs and a US-trained nutritionist, we have formed a working group for creating a special Tibetan Food Pyramid in 2019. Within this working group we decided to create a specific **"Tibetan Food Pyramid".** Apart from realistic nutrition recommendations we wanted to include typical Tibetan Foods like **TSAMPA**, but also other specialities like Thukpa, Thenthuk, **MOMO's**, dried fruits, special hard cheese and Tibetan Butter Tea.

Because of the **Corona years 2020 and 2021** things went not the way as it was planned: We couldn't meet any longer and had to do the whole coordination by email and ZOOM-conferences. However, it was impressive, how well the whole coordination worked and at the end of 2020 the Original-Version in English was more or less ready. Towards the end of creating this new Pyramid, the Scientific Committee of TCV Chauntra and Mrs. Sharling had organised a whole project week, in order to give the pyramid the "last good shape"!

After this, we still needed the translation into German and Tibetan language. We had decided on a Tibetan translation, because the elderly amalas don't speak so well English, but also because we want to offer the pyramid to the CTA (Central Tibetan Administration) in Dharamsala as well as to Tibetan newcomers in Switzerland, Germany and Austria, who sometimes don't speak too well English, not to speak about German. Finally, the translation was done by a member of the CTA and Mrs. Sharling has done the proof reading.

The German translation was done by myself. During spring 2021 the pyramids were printed in all 3 languages in Switzerland in a Din-a-3-version. The TCVs in India were printing the English and Tibetan version not only as this small poster but as large wall Screens for all 8 Tibetan Villages.

FINANCIAL PART

ICT (International Campaign for Tibet, Deutschland) has again taken over the main part of the costs. The Snowland Children Foundation has also taken over some costs bsides the part of creating and organising the pyramid.

ADDITIONAL INFORMATIONEN TO THE VARIOUS LEVELS OR LAYERS OF THE PYRAMID

BLUE LEVEL OF LIQUIDS: 8 – 10 glasses (200 ml) distributed throughout the day (1-2 l)

With respect to the quantity of liquids, the whole world is recommending 1-2 litre per day. However, during hot temperatures in summer and lots of sports the requirement can be higher. The best liquid is – sure enough – plain water or unsweetened tea. Tap water is not recommended in India, Nepal or other Asian countries, because it is most often not available in a drinkable quality. Therefore, the recommendation would be bottled water. Unsweetened tea from fruit or herbs as well as coffee in small quantities also count as acceptable good sources for liquids.

Liquids can also contain important minerals and trace elements; however, this can vary quite a lot between different drinks. Savoury drinks like Lassi, Soft Drinks or plain fruit or vegetable juices don't' count as a liquid as they contain too much energy (calories), but also nutrients like carbohydrates (some contain heaps of plain sugar), protein or even fat. Sure enough they also contain water and as such liquids (like soups as another example). With this they reduce the quantity of pure liquids like water. But – in general – they belong to the top of the pyramid with the pure savoury products, with the exemption of milk and milk-products which belong to the "red" level of proteins.

Liquids cannot be taken "in storage" (like foods), because excess water is rather quickly excreted by the kidneys. Therefore, one should not drink too much before going to bed in the evening…Liquids should be distributed equally throughout the day. Especially in older age, it is important to drink regularely, as the feeling of thirst is decreasing in elderly people.

Water serves mainly as a transport and as a solvent in the body. However, it is also important for the regulation of body temperature, all enzymatic processes, liquids in the brain and is very important for the digestion.

BROWN LAYER OF CARBOHYDRATES: daily 3 portions, if possible whole grain products

The brown level of carbohydrates (so-called satiety products) contains mainly foods with various starches that offer long lasting energy, but are with their plant fibres also important ingredients for a smooth digestion and softer stools. Within the family of plant fibres we also include so-called soluble fibres that are important nutrients for the good and health-increasing microbiota (gut bacteria).

Within this group we find all sorts of **cereals** like rice, barley, wheat and other grains, oats, maize, millet, seeds and pulses and others.

One of the “super foods” of Tibetans would be **TSAMPA**, roasted barley. Traditionally it is kneaded to small balls and put into the typical Tibetan butter tea. However, in modern times one can eat it also like a porridge or muesli. Tsampa contains also the important **Beta-Glucan** (also found in oat, but in smaller quantities): This helps reducing the cholesterol level in blood by binding cholesterol in the gut and excreting it. It also helps diabetics to control their blood glucose level in a better way (long lasting energy).

We need energy not only for our muscles to work, but especially also for our brain that needs per day 150g (5.3 ounces) glucose (e.g. from breaking down starch in our gut or directly with glucose / sugar (= saccharose) in our foods). Actually, all cells in our body need energy in some ways for functioning correctly. In addition, cereals also contain some important minerals, trace elements and vitamins (especially whole grain products).

In terms of products, we know rice, pasta in all forms like Tingmo, Thukpa or spaghetti, Chapati, Tibetan and other breads, batsa markhu, sha balap, tortillas, couscous and other cereal products. As said before, it would be best to use the whole grain variants.

Pulses like lentils, chickpeas, goa beans, kidney beans, red or white beans, soja beans are belonging to 2 layers, the brown level of carbohydrates, but – because of their high protein content – as well in the red level of proteins! They are also rich in other important ingredients. Soy sprouts and other sprouts are vegetables and belong to the green layer.

Portion Sizes:

They are dependent on age and sex, but are also influenced by body size and activity level. This means that the energy requirements are somewhat different and should be taken into account in terms of portion sizes. (e.g. uncooked rice: 5-6 soup-like spoonful, cooked rice: 1–1,5 cups with 200 ml content, raw pasta: 4-5 spoonful (50 – 75 g or 1,8-2.7 ounces), cooked pasta: 1-1,5 cups, raw pulses: 3-5 spoonful, cooked pulses: 1-1,5 cups, bread: 1-3 slices.

GREEN LEVEL/LAYER WITH VEGETABLES AND FRUITS: Recommendation of «5-a-day»

The next level in terms of frequency of intake (so the quantity goes down, the higher the level to the top of the pyramid) presents the green layer of vegetables (3 portions a day) and fruits (2 portions a day). Those products contain many various vitamins, minerals and trace elements as well as antioxidants, so-called secondary plant ingredients and again fibres. It’s important to keep the choice of foods as **colourful as possible.** This guarantees the best variety of all important ingredients: Each vegetable and fruit contains a special spectrum of vitamins etc. This means, that the more varied we are eating, the higher the security to get all essential and important nutrients into our system.

Also dried fruits find their place in this layer and count as a portion. And - it’s also possible to use deep frozen products as they are frozen directly after the harvest and therefore still contain most of the important ingredients. It’s also possible to replace one portion by a fruit or vegetable juice. However, one should keep track on the sugar or salt content that could be quite high in some commercial products.

Important: In general, one should not eat fruits after 4.00 p.m., as they are not so easy to digest (mostly they are raw). When insoluble fibres are digested later in the day by gut bacteria, the production of gas can inflate the belly and therefore disturb the sleep. Fruits (but also vegetable)

should – if possible and after intensive washing - be eaten with the skin, as vitamins are mostly directly under the skin.

Portion Sizes:
1 portion equals about 120g (4.2 ounces). Without having to weigh the products all the time, one has a "rule of the hand": One hand full vegetables or bigger fruits like tomatoes, apples, etc equals about one portion. In terms of smaller veggies, fruits, salad but also deep-frozen products one put 2 hands together to build a small cup and filling this up equals again one portion. In addition, this method is taking into account the size of the person, if it is cooking for him- or herself! When preparing veggies or fruits, one should watch out that the products are FRESH, not getting heated up too high or too long, that one does not add too much liquids and also eats this liquid as it contains the water-soluble vitamins, minerals and trace elements!

RED LAYER OF PRODUCTS WITH A RATHER HIGH CONTENT OF PROTEIN; 3 Portions/day

The red level contains foods with a rather high content of proteins, like milk and milk products like dahi, curd, lassi, cottage cheese, kefir, or cheese (at least 1, better 2 products per day from this group). Sure enough, pulses like lentils etc (see brown layer), meat or poultry, eggs, fish or seafood, tofu, but also mushrooms and again hard cheese belong to this group as well and should be eaten twice a day.

Together with minerals, proteins are forming the structure and therefore the height of our body. They are also important for our muscles and immune system. That's why it is easy to understand that with a reduced protein intake, we not only see a reduced growth in kids until about the age of 20 but also an increased risk of infection (in all people). And elderly people again (like during the youth) need more protein, because in old age the muscle protein is broken down in a higher rate compared to the normal adult life. Therefore, it's important to use high quality protein in the nutrition of young and elderly people, who in addition quite often eat lower quantities as in younger ages.

Pulses like lentils in all colours, chickpeas, kidney beans etc (see all the varieties in the brown layer) play a **very important role as good sources of protein within the vegetarian nutrition.** As they contain also many carbohydrates, we find them in both layers, brown and red.

Each of the mentioned (and there are more) protein sources is offering in addition a very specific spectrum of other important nutrients like Calcium (milk, milk products and especially hard cheese), iron (eggs and meat), Vitamin B 12 (all (and only) animal proteins and eggs) as well as the essential omega-3 (n-3) fatty unsaturated fatty acids, especially for the functioning of our brain and heart muscles!

Portion Sizes:
- 1 portion of milk and milk-products: 200 ml milk or 150g (5.3 ounces) of other milk products
- 1 portion of cheese equals 30g (1.1 Ounces) of hard cheese or 50g (1.8 ounces) of soft cheese
- 1 portion of **animal** protein, fish or **Tofu** equals 100 – 120g (3.5-4.2 ounces)
- 1 portion of eggs are 2 eggs

In this level (as in every level) it is of upmost importance to keep the variety. In vegetarian nutrition it is essential, to eat the right quantity of eggs, pulses, tofu, cheese and – if available – milk and milk products. In a non-veg nutrition, it is enough to eat meat/poultry 2-3 times a week.

<u>YELLOW LEVEL OF OILS, FATS AND NUTS:</u> **small quantities but highest quality! with all meals**

Now, we have almost reached the upper part of the pyramid! This **<u>yellow</u> layer contains oils and fats but also nuts in all varieties** (peanuts are no nuts!). Fats (oils are also fat, but liquid and nuts are very rich in fat but also other important nutrients) are very important sources of energy, but mainly energy reserves. Fats contain per gram more than the double amount of energy (calories) compared to carbohydrates (fast energy) or proteins (using proteins for energy purposes is not very useful for our body). One should take this into account in terms of quantities eaten! One should not use too much products that are very rich in fats like butter, margarine, mayonnaise, cream, dips and especially chips. However, plant oils (e.g. certain plant oils like rapeseed oil (Canola oil), soy bean oil, mustard oil are again containing those omega-3- (or n-3) unsaturated fatty acids. 80% of our brain is made up by those fatty acids! And – our body cannot produce them; also not the omega-6- (n-6) unsaturated fatty acids that are in general enough in our normal nutrition.

Fats and oils contain in addition the fat-soluble vitamins “ADEK” (= vitamin A,D,E and K). They can be absorbed in our gut only together with fat! That’s why it is important to add a little bit of fat to most vegetables that contain those vitamins like carottes (beta-carotin, a precursor of vitamin A), peppers in all colours, broccoli etc.

Nuts contain aside of fat also quite important quantities of fibres, protein, minerals and trace elements and so-called secondary plant ingredients like antioxidants.

It’s important to know that **various plant oils contain very different spectra of fatty acids.** Their effect on our level of blood-cholesterol may also be very different. Generally, the higher unsaturated those fatty acids are, the better they are in lowering or at least not affecting the blood-cholesterol level and the better they are for our brain, heart and immune functions!

What kind of fats and oils for which purpose?
In Asia but also Europe, the best oil in class seems the Rape Seed Oil (Canola Oil in India). However, the frequently used Soybean Oil, Peanut Oil, Wheatgerm Oil or (small quantities) of Mustard Oil also have high quantities of unsaturated fatty acids. The frequently used Sunflower Oil is not so good as it contains almost only omega-6 (n-6) unsaturated fatty acids and is therefore disturbing the balance between n-3 and n-6 oils. Olive Oil (mono-unsaturated fatty acids) is also very good for our health.

However, one characteristic is similar in all unsaturated fatty acids: They are very sensible towards heat and get oxidised. Therefore, one should use them either with room temperature for salad or heat them only lightly. Sometimes one can get so-called refined Rapeseed Oil that has a higher heat-stability. This and Olive Oil one can use without problems for cooking. Deep-frying - that is anyways not recommended too often because of the high fat content in the food after deep-frying– must be done with special fats for deep frying. This is normally indicated on the label.

By the way: **Avocado is the only fruit that is very rich in fat** (and therefore contains many calories). However, because of this, it also contains important unsaturated fatty acids and all fat-soluble vitamins (ADEK) and even noticeable quantities of Calcium!

Attention to hidden (bad) fats: We find them in deep-fried products like French Fries and Chips, Fast Food and ready-to-eat foods but also chocolate!

Portion Sizes:

- daily 2-3 spoon full (20-30 g or 1 -1.1 ounces)
- daily 1 portion of nuts (20-30g or 1-1.1 ounces)
- daily 1 spoon full (10g or 0.4 ounces) of butter or margarine

Storage:
The higher unsaturated the fatty acids in an oil, the easier those products can get oxydised (rancid) during heating or when not protected against sun light. That's why we have the 3 «C»-rule:

- Cool
- Closed (in cupboard or in a dark bottle)
- Covered (closed bottle that is protecting against oxygen that is also oxydising fats)

LILA PYRAMID-TOP–THE HIGHEST LEVEL: SAVOURIES, SWEET & SALTY: FOR PLEASURE

Within the top of the pyramid, we find the "savoury" products or snacks, sweet or salty and also Soft Drinks and Energy Drinks. Those products are actually meant as reward or "Feel Good"-products. In general, they contain many calories (energy): the sweet products are filled up with sugar and fat, the salty products with salt and fat, soft drinks and energy drinks again sugar without nutrients or other important factors. That's why they are also called "products with empty calories"

And – what belongs to this level?

- **Sweets:** Chocolate, white sugar, cakes, honey, candies, ice cream, chocolate bread spreads, confiture, sweet popcorn, etc.

- **Salty nibbles:** CHIPS and co., peanut butter, salty popcorn, etc.

- **Soft-Drinks and Energy-Drinks**: Coca-Cola (coke) is both, very sweet and also very acid; lemonade and sweet sodas, sweetened ice tea, sirop, alcoholic beverages, etc.

Actually, one doesn't really need those foods, but – they still have a good reason to be around, even in a normally balanced nutrition: They are FOR PLEASURE! As long as one doesn't eat too much of them, e.g. a whole plate of chocolate in a few minutes while watching TV without even realising it, they are not bad at all. However, one could also eat some dried fruits like apricots or some un-salted nuts instead!

Therefore, when eating products from the top of the pyramid: Enjoy them, eat them slowly with lots of pleasure and good conscience and NOT "on-the-go"!

Portion Slzes
- 1 bar of chocolate
- 1 small icecream
- 1 hand-full of Chips (1 small package with 50g or 1.8 ounces contains already 277 kcal!)
- 1 hand-full of salty nibblings (20-30 g or 0.7-1.1 ounces)
- 1 glass of soft drinks with 200 ml (100 kcal) and not the whole bottle (500 ml have already 250 kcal!)

The great wall-paper for the Tibetan Children Villages