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News from science and nutritional invenstigation

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CRASHFIT

IMPORTANCE AND USE OF CRASHFIT AS A FOOD SUPPLEMENT

What its the difference between CRASHFIT and common Crash-Products („weight gainers") for power sportsmen?

Crashfit contains valuable full grain oat meal and fructose (as non glucose sweetener).
Usually these products contain a large amount of chemically modified corn starch called „maltodextrin".
Maltodextrin has the advantage to be well soluble in water and to have nearly no taste, but it contains nearly no other nutriens except glucose. Oat meal is characterized by a high content of minerals (magnesium, potassium, Zinc), vitamins and fibre.
With the product Crashfit it was possible the first time to provide a new type of weight gainer, which can be prepared easily and that widely meets the characteristics of a natural full grain food.

Why are the nutrients in full grain oat so important in sports nutrition?

The minerals in oat meal are provided in quantities which are optimal to utilize the carbohydrates for energy production or glycogen storage. Moreover the minerals are widely bound to protein and so they are resorbed much better than in chemically added form. The natural content of the trace elements zinc and iron is better bioavalilable too when compared with usually added salts zinc sulphate ore iron sulphate. The usually added simple maltodextrin has nearly new trace elements like zinc and iron. The permanent use of such products enhances the development of trace element deficiencies in sportsmen.

For sportsmen the natural content of trace elements is very important because these trace elements – especially zinc an iron - are very important for the energy metabolism, for regeneration and for a positive training effect.
By many reasons just these trace elements are lost by a sportsmen and so a sportsmen usually has an elevated demand for these nutrients.
Many investigations have shown that deficiencies of iron an zinc are much more frequent in sportsmen in spite of the high food energy intake. It is common opinion in sports nutrition science that the well known immune deficiency of exhaustingly trained sportsmen is caused mainly by a deficit in zinc followed by a deficiency in glutamine. The proper supply of zinc alone may reduce the days of infection per year by about 50%.

Oat meal helps to avoid deficiencies of zinc and iron in sportsmen and their consequences for performance and health.
Due to the natural content of micro nutrients and here especially trace elements **Crashfit** in combination with milk must be regarded as a high value nutrition, which may be used as main nutrition even for a longer time.

The higher the biological value of a protein the more new body protein may be synthesized with the same amount of protein intake.

In the product **Crashfit** three very good proteins are combined to generate a protein mixture with an outstanding biological value: by the whey protein (b.v.103), oat protein (b.v.90) and egg albumen (b.v.100) the mixture results in a biological value of about 110. These „b.v." values are calculated in accordance to the European system introduced by Prof. KOFRANYI (they are not comparable to US-American b. v. data giving about 50% higher values).

Many other „weight gainers" have soy protein (b.v. about 50) or casein (b.v.72) as the only protein source. Compared with such products **Crashfit** enables about 50% to 100% more protein synthesis. So here the positive effect of training on protein syntheses can be used much better to gain more muscle mass and power. This effect is enhanced by the positive effect of the valuable trace elements from oat. Futher on the combination of milk protein with oat protein and egg albumen leads to a higher arginine content compared to simple milk proteins. This einhaces the anabolic effect of protein supply and supports the liver metabolism and thereby regeneration.

Importance of the trace element zinc in sports nutrition

- important for many enzymatic reactions in the energy metabolism
- important for he acid-base-balance (reduces the risk of acidification in cells and blood thereby enhancing work capacity and shortening the necessary time for regeneration)
- important for a good protein synthesis
- important for the regulation of blood glucose by an adequate production of insulin
- important for good energy of the heart
- important for wound healing – also for typical micro trauma in muscle of sportsmen
- important for antioxidant defence and reducing inflammation
- important for the performance of the immune system
- important for the syntheses of sexual (androgen) hormones and sperm production
- important for a healthy hair growth

Why its the fibre of oat valuable in sports nutrition?

Full grain oat meal contains natural fibre which supports the proper digestion of carbohydrates. Further on it is known today that oat fibre is used in the colon by bacteria so producing important energy sources and growth factors fort the mucous cells in the gut. Especially for intense work load training a certain supply of fibre may be useful to reduce the risk of constipation in sportsmen caused by insufficient hydration. Oat fibre contains natural water binding polymers which reduce constipation on one side and activate the pluralistic moment shortening the transit time of faeces on the ther side.

Weight gainers for diabetics too?

Sugar, dextrose glucose and maltodextrin are cabohydrates which should be avoided by diabetics. **Crashfit** contains carbohydrates only in the form of oat starch and fructose. Oat starch promotes a stable glucose concentration in blood. The fructose is used to sweet the product; this sugar is used indirectly by transformation to liver glycogen. So glucose is set free by the liver only in case of demand which is very helpful for diabetic sportsmen. Fructose its used in diabetes nutrition of decades with much success. The use of fructose avoids the use of unphysiological artificial sweeteners.

Diabetic sportsmen should discuss their nutrition with an experienced sports physician, because intensive physical workload elevates the demand for carbohydrates and reduces the necessary dose of insulin. Without an adaptation of diabetic nutrition and insulin support sport may cause dangerous hypoglycemina. The use of **Crashfit** is favourable because it contains the carbohydrates in a suitable form.

Why are multi vitamins important for sports nutrition?

Intensive work load enhances the energy production of the body and this causes an elevated demand for many vitamins. This demand cannot be met by the larger intake of usual food, because the food preferred by most sportsmen is easily digestible and poor in vitamins (for instance white noodles, whit bread and even malt beer).

Crashfit contains the natural nutrient spectrum of full grain oat. But even this would not be enough, so the most important vitamins are added to Crashfit. Vitamin A is provided in the safest form (pro vitamin A = ß-catoten) and so the body converts only the amount of procitamin to the true vitamin A he actually needs.

How is the proper use of Crashfit?

Due to its composition of nutrients **Crashfit** is a relatively protein rich product for the nutritional support after exercise or even during very long exercise. It may be used with water or with milk (1,5% or 3,5% fat) depending on the kind of sports. After an exhaustive training **Crashfit** enhances the regeneration of energy metabolism and protein metabolism.

Further on the product can be used as a small meal between, especially in situations where the use normal food like fruits or vegetables makes too much effort or is not advised.
A Crashfit-Drink can easily and quickly be prepared using a wide neck bottle or a special mixing bottle. Start the mixing process using about half of the final fluid volume and dilute if the solution is already homogenous.

A combination of **Crashfit** in full fat milk an fruits (even in dried form) may serve as full nutrition if no other food is available during expeditions or sport competition in countries with strange food. This helps to avoid the risks (from reduced performance to illness) of a change to a nutrition in strange countries. Further on **Crashfit** can be used to provide the nutrients the body has consumed over night in phases of high physical activity (for instance during extreme mountain climbing tours).
Last not least **Crashfit** is a good source of nutrients for healthy or rehabilitating elderly people with catabolic metabolism.

In power sports it may be interesting to combine **Crashfit** with raw egg albumen to have a long lasting source of aminoacids which makes its unnecessary to eat in the night. Endurance sportsmen may combine **Crashfit** with ray egg albumen to have along lasting source of amino acids which makes it unnecessary to eat in the night. Endurance sportsmen may combine **Crashfit** with 100% fruit juices to have more carbohydrates and potassium for glycogen storage before and after a long training or competition. These examples show that nearly all sportsmen can profit from **Crashfit.**

How to use Crashfit?

Crashfit is mainly for:
Power sports: (i.e. weight lifting, body building, fitness training)
Speed power sports: (fighting sports, Swimming, triathlon, mountain marathon, mountain biking)
Endurance sports: (for instance marathon, long distance biking, long distance skiing)

The use depends mainly on the special situation in sports and less on the special kind of sports:

1. Early regeneration phase: immediately after exhausting competition or training 500 ml **Crashfit-Drink** prepared with 80g powder and 500ml milk (1,5% fat) are recommended. This is he most important nutrition situation in sports because in this phase the regeneration must be supported and the realization of the positive training effect depends on an adequate availability of many nutrients.
2. Snack between the meals: 250 to 500ml **Crashfit**-Drink prepared as described before. Such protein rich snacks are recommended in the muscle gaining-phase in all kind of sports.
3. Early in the morning: in many intensively trained sportsmen the protein consumption during the night is so high that the protein metabolism becomes catabolic in the early morning. In such cases it is recommended to start the day with 250ml **Crashfit**-Drink immediately after awaking. Sportsmen with a very high muscle mass have good success even when they consume up to 500ml of a **Crashfit**-Drink about at 4 clock and than they sleep again and start the day with another **Crashfit**-Drink. (This drink should be prepared in the evening already and stored cool so that the sportsman can consume the drink without becoming really wake and so it is easy to continue sleeping after the consumption of the drink).
4. Last meal in the late evening: here it is possible to have a protracted supply of amino acids by proteins with very different digestibility: Therefore the quickly digestible **Crashfit**-Drink is combined with slowly digested egg protein (1 or 2 raw eggs or egg white only). Here a **Crashfit** Drink without fruit acids added should be preferred like Vanilla or Cocoa. (Remark: if your antioxidant status is perfect you can eat as much cholesterin from fresh eggs as you like: some modern studies have shown that only the oxidated form of cholesterol is harmful for the vessels. But you should strictly avoid all stored foods high in cholesterin like egg-noodles, egg-cookies, old dared meat (Hungarian salami) and old cheese (like Mozzarella).
5. Energy supply during long lasting exercise: before and during exercise if carbohydrates are wanted: 80g **Crashfit**-Powber 500ml 100% apple juice gives a hypertonic carbohydrate rich drink. The addition of 500ml water results in a hypotonic drink which is utilized even faster.

Sports nutrition and food additives:

Food additives are used for technical purpose (preservatives, stabilizers, thickeners, artificial emulsifiers) or to modify the taste (sweeteners, artificial aromas) and look (color) with chemicals. It is very rarely that such substances are helpful for nutrition. Many food additives are used to pretend a product of natural origin though this is not true.

The competent user of nutrition products should try to use products with minimal or no use of food additives. For instance preservatives are used to prolong the possible storage for a product and this is mainly in favour of the traders. Sweeteners give the taste of sugar without any nutritional value. In sports nutrition it is much better to use alternative carbohydrates with slow insulin demand but full energy utilization like fructose or xylitol. Artificial sweeteners do not solve he problem that in modern industrial societies the people are educated to consume sugar in large amounts. This false education is invented by the sugar industry and it begins when babies get sweet as reward for a behaviour which is comfortable for the parents. The replacement of sugar by artificial sweeteners does not change this false and unhealthy education. It is better to learn to live mainly with foods without sugar ore sweeteners added.

There are products in the market today that contain more additives than nutritional ingredients (for instance many sweets).

Many food additives – though being permitted by the national authorities – are in discussion whether they are able to harm the consumer. At least there is no doubt that many allergies are provoked by food additives.

Crashfit was developed to avoid unnecessary food additives like artificial flavours, stabilizers, preservatives and artificial sweetener.

In conclusion it can be stated, that Crashfit is a modern and natural new generation of the traditional weight gainers. Natural and high value ingredients enable a very anabolic utilization of the high value protein-mixture Properly used this enhances the anabolic chance of the positive training effect on protein metabolism after adequate exercise and it enhances the work capacity during competition and exercise.

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