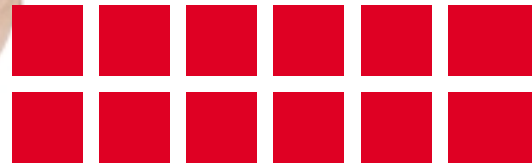




## Your Ultimate Conditioning The Role of Fats in Bodybuilding



### Fats Information Sheet 5

#### Introduction

"More and more bodybuilders are relying on flax oil prior to competition to help them achieve that shredded look, but out of season many are neglecting their long-term essential fatty acid intake and creating problems for themselves"



Dr Udo Eramsus, the world's foremost authority on the right fat diet and author of best selling book 'Fats That Heal, Fats That Kill', answers the questions bodybuilders need to know about essential fatty acids and their training needs.

*The information in this leaflet is for educational purposes only.  
It is not intended to replace the services of healing professionals  
for conditions that require them.*



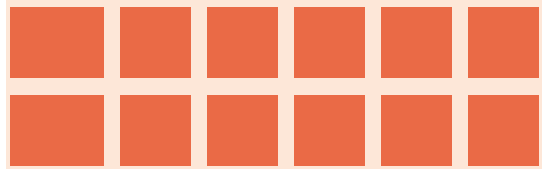
**It was Dr Udo Erasmus who introduced flaxseed oil, a fat, for human consumption. Of course, flaxseed oil has been around for hundreds of years, but prior to Udo's pioneering work, no one considered it nutritionally valuable. Dr Udo Erasmus studied biochemistry and genetics for eight years at the University of British Columbia. He then obtained his Master's Degree and Ph.d. in nutrition. His book *Fats that Heal, Fats that Kill* is in it's 20th re-print and he has spent the last 20 years of his life studying and educating fats full-time.**

### The real facts on fat

We have heard about the fats that make you fat, such as the hard and hydrogenated fats. And we have also heard that fats make you ill; that's mostly because of processing - like frying, and the hydrogenation and overheating of supermarket and low quality oils. As a result many of us have become fat phobic, but the low fat diet also causes lots of problems.

A low-fat diet will stunt the growth of children and causes dry skin - what will happen in a bodybuilder who needs to develop and maintain muscle tissue? A lot of bodybuilders have dry skin because they're on low-fat diets. They have low energy levels. They don't produce the testosterone needed for muscle building on a low-fat diet. They get a leaky gut and food allergies and if they stay on a really low-fat diet long enough, their hair will fall out; males become sterile; females miscarry; people get knee pains, arthritis-like conditions; heart rhythm disturbances. A lot of problems are caused by not eating enough of the right fats.

Dr Udo Erasmus was the one who introduced flax oil for consumption. However soon after his initial research he began to educate us to the importance of ensuring that we get the correct balance of omega-3 to omega-6 essential fatty acids. He says that Flax oil is too rich in omega-3 EFAs and people become deficient in omega-6 EFAs if they use it exclusively for too long (around two to three months).



## Healthy Fats and Bodybuilding

**Dean Garratt**, British and World Champion Natural Bodybuilder, lecturer and writer of nutrition and training column in The Beef bodybuilding magazine, asks Dr Udo Erasmus the questions specific to these dedicated athletes.

### Dean Q1)

Success in bodybuilding is determined by the quality of nutrients ingested by an athlete year round. With this in mind, how can essential fatty acids (EFAs) enhance the performance of the natural athlete?

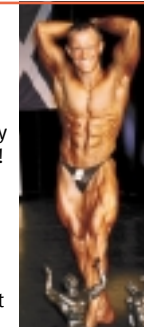
### Udo A1)

In a recent study with Danish athletes, it was found that a quality nutritional oil blend with the correct 2:1:1 ratio of omega-3 and omega-6 (EFAs) and omega-9, at 15ml/25kg of body weight/day:

1. Enhanced stamina by 40-60% in athletes pushing the limits of their performance;
2. Improved muscular development (anabolic);
3. Allowed more frequent training without over-training symptoms;
4. Speeded recovery from exhaustion and training sessions;
5. Speeded healing of injuries;
6. Improved concentration;
7. Improved skin condition;
8. Improved sleep in some athletes;
9. Improved cardiovascular function;
10. Lowered the insulin requirements in a type I diabetic who participated.

This quality oil blend improved the overall health of all cells, tissues, and organs, because it provided toxin-free, intact essential fatty acids in a ratio most conducive to performance. It provided optimum amounts of the essential nutrient most commonly too low in most people's diet today.

"The task of stripping away unwanted body fat pre-contest is always a tough challenge. This year, however, I discovered a quality nutritional oil blend and decided to turn my diet around, lowering my carbs and increasing the amount of oil and veg in my pre-contest regime. The results have been staggering!



The turning point came when I recognised various signs that pointed towards a deficiency of essential fats - particularly omega-3 EFAs. I was experiencing very dry hands, and some considerable water retention in my thighs, in spite of making every effort to eliminate this problem. The dryness of my skin improved almost immediately and the water retention disappeared, revealing markedly improved vascularity in my quads and hamstrings and better overall separation in my thighs and glutes. I was able to turn my condition around within the space of a week to achieve my win at the BNB Scottish Championships."

### Dean Garratt

2003/2004 BNB Scottish U72kg and overall winner

## An Interview with Dr Udo Erasmus

### EFAs & Regulation of Insulin

Dean Q2)

Competitive bodybuilding is an art-form that privileges an athlete's physical appearance, muscularity and definition. This is linked with an individual's ability to achieve very low levels of body fat and it's well-known that this process relies heavily upon optimum insulin levels and functioning. What function do essential fatty acids serve in this respect?

Udo A2)

Unlike carbohydrates, which stimulate insulin and fat production in the body, a quality nutritional oil blend provides energy independent of insulin involvement.

Also, omega-3 EFAs turn on genes involved in fat burning in the body, and turn off genes involved in fat production in the body. Omega-3 EFAs also lowers triglycerides (by increasing the amount burned for energy and decreasing the body's own production), and reduces fats in organs, tissues, and under skin by burning them as fuel.

A nutritional oil blend is especially effective during the dieting down process if carbohydrate consumption is curtailed, and potassium is emphasised while sodium is lowered to prevent water retention.

Because a nutritional oil blend does not raise insulin levels, blood sugar remains stable, and cravings, depression, and other problems caused by low blood sugar and lead to "carbohydrate addiction" are thereby avoided.

### EFAs & the anabolic 'window'

Dean Q3)

The other part of the bodybuilding equation, aside from fat loss, involves building muscle tissue. It's well documented that post-workout is an opportune time to exploit the anabolic 'window' by replenishing depleted glycogen stores with simple sugars and hydrolysed whey protein isolate. Is this not a good time to consume oil?

Udo A3)

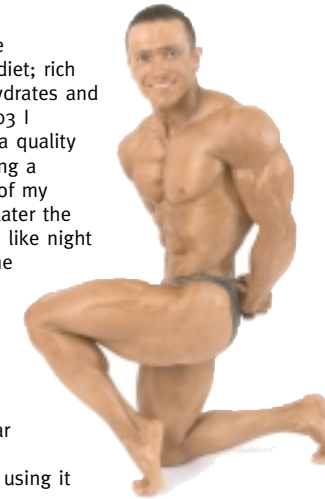
Essential fatty acids do not provide quick energy in the same way that carbs do. The production of energy in the body from fats, effectively enhanced by omega-3 EFAs, is more slow and steady.

The production of glycogen coming from carbohydrates is enhanced by EFAs, because they enhance the use of fats for energy rather than carbs. The carbs are then more easily stored as glycogen. EFAs (especially omega-3 EFAs) increase the activity of the genes involved in glycogen production.

Dean Q4)

All bodybuilders are preoccupied with the value of protein in the diet, especially from an anabolic point of view. Can you elaborate how a quality nutritional oil blend might be similarly beneficial from this angle?

"I have always followed the conventional bodybuilders diet; rich in protein, complex carbohydrates and low in fats. However, in 2003 I began supplementing with a quality nutritional oil blend following a recommendation from one of my peers. Literally a few days later the changes I experienced were like night and day. I was dieting at the time and my food cravings disappeared, my energy levels went up and I became noticeably stronger. On top of this, I found I could concentrate better at work and had a far greater sense of well-being. I only wished I had started using it sooner."



**Jon Harris**

BNBF British Champion 2003, 2nd in the WNBFF Worlds 2004  
[www.jon-harris.net](http://www.jon-harris.net)

Udo A4)

The oil blend used in the Danish study was anabolic, and led to better muscle building (anabolic), as well as slowing down muscle breakdown (anti-catabolic). The bodybuilders in the study consistently reported both of these effects.

Dean Q5)

There's been some debate regarding whether it's sensible to combine/mix whey protein isolate and nutritional oil as a means of retarding the transit time of amino acids through the gut:

i) Is oil actually effective in achieving this goal?

Udo A5)

It is. Oils slow down digestion. Hence amino acids are absorbed more slowly. Of course, there are other ways to achieve this goal, such as eating fibre with protein.

ii) Some argue that mixing oil with whey leads to protein degradation. What's your perspective on this matter?

I don't know where this idea comes from. We have not found that to be true in any of the work we have done with thousands of people over the past two decades. In fact, we recommend mixing the nutritional oil blend with whey to decrease the potential that whey has for spiking insulin.

Dean Q6)

A quality oil blend with nutritional value is a perishable product that begins to oxidise when exposed to light and air. If so, shouldn't bodybuilders be consuming the product 'off the spoon' rather than pouring oil on meals, like salads and vegetables?

## An Interview with Dr Udo Erasmus

### Udo A6)

EFA-rich oil blends have to be made with great care, they should be kept under nitrogen in dark glass bottles that are packaged in boxes and kept refrigerated at all times. This type of quality oil ensures that you are getting toxin free, intact essential fatty acids.

I recommend using the oil blend with foods to enhance the flavour, and improve the absorption of oil-soluble vitamins and other important molecules from foods.

Off the spoon is okay, but for best health, with foods is better.

### Dean Q7)

**Is Oil best taken with protein and fibrous carbohydrates, as opposed to protein and starches? And what is your view on the idea of food combining (the Hay diet)?**

### Udo A7)

Oils are compatible with all foods. It goes well with fibrous carbs as well as starches. Starches can lead to insulin and fat production, but are compatible with oil. For health, the best diet is based on greens, good fats, and proteins, with starches limited to the amount the body burns, which depends on the level of activity and metabolic rate.

Hay's diet can be useful for people with weak digestion. Separating protein meals from starch meals is not necessary if a person's digestion is strong. If someone has weak digestion, I would want to strengthen it by using enzymes, probiotics, and fibre instead of avoiding foods or food combinations.

Hay's diet is useful during the time that digestion is being rebuilt.

"After reading the book 'Fats That Heal, Fats That Kill' by Dr Udo Erasmus, I began using a quality nutritional oil blend when dieting. I found that I was able to cope so much better with the severe diet conditions required to compete as a female natural bodybuilder. My moods were better as was my hair and skin. I also found that my body was releasing more fat and I achieved better condition than ever before. I also found that whilst using oil in my off-season diet, I had better recovery and less joint ache.



### Vicky McCann

3rd in the Worlds WNBf 2004 Heavy Weights  
www.bnbfc.co.uk

### Dean Q8)

**Given that most competitive bodybuilders consume 5-6 meals daily and train between 5-7 times per week, how much oil would you recommend to supplement an 'average' bodybuilder's diet?**

### Udo A8)

Optimum in our experience is to use 15ml of a quality nutritional oil blend per 25kg of body weight per day. That amount should be spread out over the course of the day, and mixed with foods.

They can spike insulin (due to fast digestion and absorption). Fats can lead to feeling heavy or nauseous if more is eaten at any one time than the liver can handle. If the oil is spread out over the course of the day and mixed with foods, it is most unlikely that the liver's fat processing capacity will be exceeded and the unpleasant symptoms produced thereby.

"Taking into consideration that the only supplement change that I have made in my diet in the last year is a quality nutritional oil blend, I have made significant gains in my poundages used whilst training. For example, last year at approx the same time my best back squat was 18 parallel reps using 180kgs. Two weeks ago, using the same weight, I was able to perform 33 reps. Also I have been able to back squat 200kgs this year for 18 reps. This is an increase of 20kgs over the year and still improving."



### Rob Feeseey

41 years old life-time natural  
2003 UIBBN Under 70kg World Champion

### Dean Q9)

**Do you believe there are genetic factors at work, including for example blood-type and metabolism, that either increase or decrease an individual's propensity to benefit from using oil?**

### Udo A9)

The blood type notion is mistakenly applied to fat and oil consumption. The body uses exactly the same enzymes to digest and metabolise all fats (triglycerides), whether they come from plant or animal sources.

The blood type diet and food sensitivities are based on protein reactions. One who is allergic to a seed (protein) will not be allergic to the oil. The protein stays in the seed cake that remains when seeds are pressed to remove their oils. The oils are free of proteins. Very rarely does a person react allergically to oil.

There are genetic differences in metabolism that can determine that some people will need more or less oil for optimum effects than others. That is why each athlete should experiment with the oil blend to find his/her personal optimum.

## An Interview with Dr Udo Erasmus

**What is not affected by differences in genetics is the fact that omega-3 and omega-6 EFAs are both essential (required for health), cannot be produced by the body, and must be supplied from outside the body.**

Also, all people convert the seed omega-3 and omega-6 EFAs to derivatives, but there may be differences in the rate at which different individuals convert. However, conversion rate is affected more by nutritional, lifestyle and hormonal factors than by genetic ones. If conversion were not effective, death would be the result. Given that most people get far too little omega-3 EFAs, conversion must be effective, and fish oils less important than sellers of these products claim. Seed eaters and fish eaters have the same size brain and equivalent amounts of DHA in that brain, and comparable intelligence, mood, and other brain functions, provided that they get enough of the basic EFAs in their diet.

**Dean Q10)**

**If the Western diet has been shown to be significantly deficient in omega-3 essential fatty acids - why do we need a blend?**

**Udo A10)**

Omega-3 EFA intake today is about 16% of what people obtained 150 years ago, and intake was already too low at that time. Most omega-6 EFA rich oils are damaged by harsh processing. The omega-6 EFA rich oils most people use (corn, safflower, peanut, almond, sesame, soybean, canola, sunflower, etc) have been treated with caustic sodium hydroxide, harsh phosphoric acid, oxidizing bleaching clays, and then damaging high-heat deodorization carried out at or above frying temperature.



"I have been using a quality nutritional oil blend for about 12 months, and noticed a difference in the condition of my skin and hair within a few weeks. On the lead up to winning the UK, British and World titles I dropped my carbohydrate intake and increased my intake of the oil, this really helped me to drop bodyfat and get in my best condition to date and become World Champion."

**Kirsty Kent**

UIBBN World Champion, Miss Physique 52kg + 2004

Such oils can contain 0.5-1.0% processing-damaged, toxic molecules. 15ml of such oils can contain 60,000,000,000,000,000 toxic molecules (or one million toxic molecules for every one of the 60 trillion cells that make up your body). These toxic molecules can change gene expression, which then changes cell and tissue function, which can lead to molecular changes that result in inflammation, cancer and other forms of degeneration.

I want people to avoid damaged omega-6 EFA rich oils. But since omega-6 EFAs are just as essential as omega-3 EFAs, a quality oil blend will contain omega-6 EFAs from sunflower, sesame, and evening primrose oils made with health in mind.

People who say that we should just use omega-3 EFA rich flax oil because we have plenty of omega-6 EFAs in our diet do not care about your health. They should be recommending against using damaged omega-6 EFA rich oils.

Since omega-3 and omega-6 EFAs are both essential for the health of every cell, tissue, gland, and organ, both should be made and used with health in mind. It is for this reason that I do not recommend 'cooking' oils at all and is the reason that you should use quality oils developed with health (rather than shelf life) in mind.



"The nutritional oil blend I use is the only supplement I have found that will help to maintain muscle size and get that super ripped look come contest time. This is because the body's chemistry uses its 'stored bodyfat' more efficiently due to the essential fatty acids. It is also interesting to know that when dieting for a contest your carbohydrate levels become low - a quality nutritional oil blend will bridge this gap and give you surprisingly lots of energy to maintain high intensity training. I strongly feel that no bodybuilder should begin their training and dieting without it."

**Dave Griffith**

NABBA International Mr Universe Overall Winner 2004

## EFAs and Calories: The burning question

### Should you include EFAs in your total calorie intake?

Yes from a conventional perspective, a nutritional oil blend contains the same amount of calories as any other fat, 9 Kcal per gramme, however essential fatty acids have other, more important roles than just supplying energy. Once inside your cells, small organelles called peroxisomes break down the EFAs into the building blocks needed throughout the body.

At the same time the peroxisomes send signals to your DNA, altering how different genes are expressed through upregulation (turning up) and downregulation (turning down). Beneficial genes that code for things such as metabolic rate, insulin sensitivity, cell growth and maturation, glycogen production and fat metabolism are all upregulated, whilst 'detrimental' genes such as those that code for fat and cholesterol production, fat storage, glucose production in the liver and inflammatory responses are all downregulated.

**As you can see where EFAs are concerned a calorie isn't just a calorie, which is why so much success is being seen with athletes reducing their refined carbohydrate (empty calorie) intake whilst increasing their EFA intake.**

## EFAs are not just essential for bodybuilders

Essential fats play a key role in improving energy levels, stamina, performance, recovery, healing and fat loss. They are essential for all athletes on the track and in the gym. They are a health requirement for every man, woman and child, the young and elderly. They are major nutrients that we use in tablespoon, not milligram, amounts. They may improve brain function, skin condition, digestion, cardiovascular health, immune function, joint function and general health. They can also prevent many health problems.

### Useful Links

For details on Danish Athlete Study  
[www.udoerasmus.com](http://www.udoerasmus.com)  
Natural Physique Association  
[www.npa-bodybuilding.co.uk](http://www.npa-bodybuilding.co.uk)  
British Natural Bodybuilding Federation  
[www.bnbfc.co.uk](http://www.bnbfc.co.uk)  
Cain Leathem GB Fitness  
[www.gbfitness.com](http://www.gbfitness.com)  
Muscle Forum  
[www.uk-muscle.com](http://www.uk-muscle.com)



"As an exercise & nutrition consultant I have worked with many world class athletes including bodybuilders, fitness and figure champions but also athletes from track and field, boxing, martial arts, swimming, football, rugby... as varied a sporting spectrum as is possible. I always recommend they use a quality nutritional oil blend as part of a

holistic and synergistic nutritional program to maximise health as well as performance. The well-being (digestion, immune system, mood state etc) of the athlete is often overlooked by many coaches and leads to the burn-out of the hard training athlete. The "essential fats" play a key role in improving energy levels, stamina, strength, recovery, healing processes, immune function and fat loss. They are, in my opinion, a fundamental part of any nutritional plan for all athletes whether they be on the track, in the pool, out on a pitch or in the gym."

### Cain Leathem

Leading Exercise & Nutrition Consultant, Director of GB Fitness & NABBA Training Courses National Director

## How to include a nutritional oil blend into your diet

Udo recommends using the oil blend with foods to enhance the flavour and improve the absorption of oil-soluble vitamins and other important molecules from foods.

- **Pour oil onto your rice, pasta or vegetables,**
- **Mix oil with lemon juice, garlic and black pepper and pour onto your salad as a dressing.**
- **Blend oil into your protein shake or smoothie.**
- **Drizzle onto your jacket potato to replace butter.**

Many bodybuilders take it off the spoon it is your personal preference.

Optimum is to use 15ml of a quality nutritional oil blend per 25kg of body weight over the course of each day.

If you care about your health you will only use a quality nutritional oil blend.

**Quality EFA-rich oil** should be made with great care, because light, oxygen and heat easily destroy them. They should be under nitrogen in dark glass bottles and packaged in boxes and importantly kept in the refrigerator at all times. Oils of this quality will only be found in the fridge of good health stores and select gyms.

**For stockists call Savant Distribution 08450 60 60 70 (LoCall)**



## **Dr Udo Erasmus**

**Udo Erasmus received his B.Sc Honours Degree in Zoology with a major in Psychology from the University of British Columbia. In Addition, he took post-graduate studies in Genetics and Biochemistry. He also earned an MA in Counselling Psychology from the Alfred Adler School of Professional Psychology in Chicago.**

Poisoned by pesticides, he turned his attention to the field of nutrition, and began a personal odyssey back to health. Since the publication of his landmark book, 'Fats and Oils', in 1986, which earned him a Ph.D. in Nutrition, he has become an internationally recognised authority on fats, cholesterol and health and a sought-after media personality.

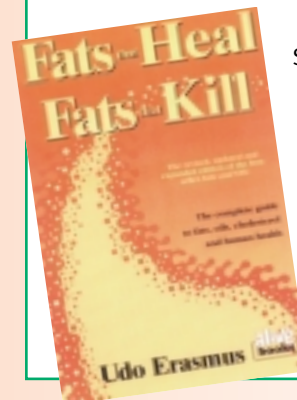
He has travelled extensively throughout North America and Europe as a public educator, known for his clarity of style and his sense of humour. He excels in translating technical and research language from scientific literature into understandable English. He makes the important practical discoveries of science accessible to consumers and industry.

In addition, he runs a consulting service from his home base in Vancouver, Canada. Topics have included fats and oils, health, anti-oxidants, flax, cholesterol and cardiovascular health, water and air quality, early family dynamics, social issues, goal setting and personal fulfilment.

**For a more detailed discussion on the role of fats and oils in diet, read the book 'Fats that Heal, Fats that Kill' by Dr Udo Erasmus, available from any good book store or from address below.**

### **ALSO AVAILABLE**

- Info sheet 1.** Fitness fats
- Info sheet 2.** Essential fats and women's health
- Info sheet 3.** The role of fats in weight loss
- Info sheet 4.** Fats That Heal Fats That Kill - A talk by Dr Udo Erasmus
- Info sheet 5.** The Role of fats in bodybuilding
- Info sheet 6.** Essential fats and children's health



Savant Distribution Ltd  
FREEPOST NEA 12027  
Leeds, LS16 6YY

Tel: 08450 60 60 70 (LoCall)  
Fax: 0113 274 5777  
email: [info@savant-health.com](mailto:info@savant-health.com)  
web site: [www.savant-health.com](http://www.savant-health.com)

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