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How to Take Niacin

Chapter 4 – NIACIN THE TRUE STORY by Dr Abram Hoffer

*There is a principle which is a bar against all information, which is proof against all argument, and which cannot fail to keep man in everlasting ignorance. That principle is **condemnation without investigation**.* —WILLIAM PALEY (1743–1805), OFTEN ATTRIBUTED TO HERBERT SPENCER (1820–1903)

The keys to taking niacin therapy are *quantity, frequency, and duration*.

You need to take enough, take it frequently, and take it long enough to see benefit.

TAKE ENOUGH *Adequately high supplement doses need to be employed to get the job done.*

As there is a certain, large amount of fuel needed to launch an aircraft or a spacecraft, there is a certain, large amount of a nutrient needed to cure a sick body. With vitamin therapy, speed of recovery is proportional to dosage used. Dr. Hoffer's standard prescription was 3,000 milligrams (mg) per day. Much less is needed for prevention and daily good health maintenance. The

Recommended Dietary Allowance (RDA) for niacin is under 18 mg per day. That is far too low. In 2007, an independent review panel of twenty-two researchers and physicians issued their **recommendation for niacin intake for an adult: 300 mg per day.**¹

TAKE FREQUENTLY Niacin is a water-soluble vitamin. This means that it is lost from the body easily during the course of a day or even a few hours. Therefore, divide the daily niacin dose and take a third of it with every meal.

Taking niacin with meals improves absorption.

Dr. William Kaufman and other experienced physicians have advocated for the importance of the frequency of doses. With the water-soluble vitamins, at any given quantity, frequently-divided doses are invariably more effective.

(There is more about Dr. Kaufman's treatment for arthritis in Chapter 7.)

TAKE IT LONG ENOUGH Some persons will notice benefits right away. Blood lipid benefits take more time. Long-standing mental illness may respond slowly, over a period of weeks or



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even months. Every patient is different, and this is why we recommend that you work in close cooperation with your personal physician.

HOW DO I KNOW IF NIACIN IS HELPING? There are two ways to tell if your niacin supplementation is working for you: subjectively and objectively.

Subjective Proof If you are fighting mental illness, you will know full well when you feel better. It is just that simple. Friends and family may comment positively. Dr. Hoffer's standard measure of recovery was this: recovered, truly well patients pay income tax. It sounds odd, but a person must be successfully holding a job in order to do so.

Placebos rarely achieve that result. Critics of Hoffer's work have claimed that it was his pleasant, positive bedside manner that resulted in cured patients. Dr. Hoffer replied, "I am nice to all my patients. However, only the ones getting niacin get better."

Common sense caution: Work with your doctor. Persons with a history of heavy alcohol use, liver disorders, diabetes, or pregnancy will especially want to have their physician monitor their use of niacin in quantity.

Objective Proof Ask your physician to check and see. For example, laboratory tests can easily verify if your blood lipids are benefiting from niacin.

Watch especially for lower triglycerides, and higher "good" HDL.

HOW MUCH IS TOO MUCH? A person's absolute upper limit for niacin is the amount that causes nausea, and, if not reduced, vomiting. The dose should never be allowed to remain at this upper limit. ***Dr. Hoffer's usual therapeutic dose range was 3,000 mg daily, divided into three doses of 1,000 mg each. Sometimes some patients need more.*** The toxic dose for dogs is about 5,000 mg per 2.2 pounds (1 kilogram) of body weight. We do not know the toxic dose for humans since niacin ***has never killed anyone.***

We think that ***monitoring long-term use of niacin is a good idea for anyone.*** It consists of having ***your doctor periodically (perhaps once or twice a year) check your liver function with a simple blood test.***

Correct interpretation of these monitoring tests is important. ***Niacin is not liver toxic, but niacin therapy does increase liver function tests. This elevation means that the liver is active—it does not indicate an underlying liver pathology.***



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So-Called “Safe Upper Limits” In spite of all this, there is now a government-sponsored “Safe Upper Limit” (or “tolerable upper intake level”) for niacin consumption.

It is 35 mg per day.² We offer this book as a charge-leading rebuttal against the arbitrariness and absurdity of that figure. Among many reasons why it is preposterous is that the so-called Safe Upper Limit is only about twice the RDA! ***There is no clinical or laboratory evidence whatsoever that proves that niacin, or any other vitamin, is dangerous at double the RDA.*** Instead, authoritative-sounding speculation is offered to the public in the form of statements like this: “Supplement users at risk from ignorance of tolerable upper limits ... Consuming too many nutrients can lead to harmful side-effects, a fact many users were worryingly unaware of, said researchers ... The tolerable upper level of one B vitamin, niacin, was exceeded by nearly 50 per cent of all the participants in their study who reported taking supplements ... Dietary supplements exceeding the tolerable upper limits were fairly common in the U.S., as the supplement industry is not regulated in the same way as pharmaceutical industry.”³

The authors of this paper claim that side-effect symptoms will likely occur in half of those persons taking 100 mg of supplemental niacin, and that it is impossible to identify those who are at greatest risk.⁴ We consider such statements to be scaremongering and sensationalism.

In his fifty-five years of experience with thousands of patients, Dr. Hoffer found that even 40,000 mg of niacin daily is not toxic. He estimated that over 200,000 mg per day is fatal.

There is a ***built in safety valve with niacin: vomiting.***

Nausea will occur far in advance of any risk of fatality. Most of us would never exceed a few thousand mg daily, an amount that orthodox physicians frequently give patients to raise HDL.

The safety margin is very large. For more than twenty-five years, data collected by the American Association of Poison Control Centers (AAPCC) confirms that there is not even one niacin-related death per year.

(Download any Annual Report of the American Association of Poison Control Centers from 1983–2009 free of charge at <http://www.aapcc.org/>. The “Vitamin” category is usually near the end of the report.)

THE NIACIN FLUSH AND VASODILATATION (VASODILATION) Niacin usually causes a flush a few minutes after it is taken. A few people will flush with 25 mg, more with 50 mg, and most with 100 mg. The flush begins in the forehead and works its way down the body, rarely



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affecting the toes. The higher the initial dose the greater the initial flush, but if any dose causes a maximum flush a larger dose taken later will not cause a greater flush. The capillaries are dilated and the blood flow through the organs is increased. There is an internal increase in blood flow as well as in the skin, which may last up to several hours.

Patients must be warned that this will happen. If not, they may be very surprised and even shocked. Patients can be started on lower doses until they have adjusted to the decreased intensity of the flush. Then the doses may be increased gradually.

Vitamins: How Much to Take? In his classic health book, *Supernutrition*,⁵ Richard A. Passwater suggests a simple and utterly nontechnical method to determine what amounts of vitamins you personally need to take for optimum health. Wisely, no one prescriptive list is given; no “one size fits all” approach is offered. Rather, Dr. Passwater builds a careful and well-documented case for megavitamin therapy, and then shows how to increase your own vitamin doses in two-week intervals until peak health has been achieved. Essentially, you take the smallest amounts of supplements that give the greatest results.

If you go over and beyond that level, your health benefits will stay the same or decline. That would be the point of diminishing returns, the point of wasting money, and/or a potentially harmful overdose.

If this seems like common sense, perhaps that’s because it is. Interestingly, when doctors use this very same approach with drugs, it is called a “therapeutic trial.” With drugs, it is trial and error. With nutrients, it is trial and much, much less risk of error. With large initial doses, the niacin flush is more pronounced and lasts longer. But with each additional dose, the intensity of the flush decreases and in most patients becomes a minor nuisance rather than an irritant.

To minimize flushing, niacin should always be taken right after finishing one’s meal.

Each time the niacin is taken, the flush is repeated but to a much lesser degree. In most cases it is almost all gone after a week or so, and is a minor nuisance at worst.

However, some patients do not tolerate the flush and will have to discontinue the niacin. Non-flush preparations are available for these subjects (see Chapter 1).

If the routine is interrupted for several days and then resumed, the same sequence of flushing will occur, but the initial flush usually will not be as strong as the original one. The intensity of the flush is minimized by taking the pills after meals and by taking them regularly, three times daily.



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I (AH) have been taking niacin for fifty-five years and at most have very minor flushes. It is a drier flush, not like the wet menopausal flush, or the flush suffered by male hormone blockers used in treating prostate cancer.

Niacinamide does not cause flushing in the majority of patients. In perhaps 1 percent of patients, it will cause a very unpleasant flush, in which case it cannot be used. Probably their bodies convert the niacinamide into niacin too rapidly. This is unlikely to be you. Vasodilatation (often called vasodilation) is sometimes very helpful. Many patients, *particularly arthritics*, have reported that they feel much better when their joints are warmed up by the flush and some will stop taking niacin for a few days in order to experience the flush once more.

But for most patients, the sensation is not pleasant. It is tolerable if patients know what to expect and are properly *prepared by the physician*.

William Parsons Jr. writes that only physicians who know niacin should use it. No-flush and slow-release preparations, which are also no flush, are available. The best known no-flush product is inositol hexaniacinate, which is an ester of inositol, a vitamin, and niacin. I have used it with success for many years and consider it less effective compared to niacin. Doubling the niacin dose may be needed. But only *trial and error will determine which is best for some patients*.

Some Histamine History

Back in 1962, with only about a decade of niacin research behind me, I (AH) wrote: "Little is known about the physiology of the nicotinic acid vasodilatation; it resembles histamine flushing in its mode of onset, unpleasantness, and bodily distribution but in contrast to the histamine-induced flush, there is no fall in blood pressure. Possibly it releases a histamine-like substance, either histamine itself or serotonin."

Edmond Boyle, then director of research at the Miami Heart Institute, believed the dilatation was caused by the histamine released. He had examined the mast cells [found in skin and connective tissue, and the mucous linings of the nose, mouth, lungs, and digestive tract] before and after taking niacin and had seen that the mast cell vesicles containing histamine were empty after the flush.

It is believed that niacin causes a flush by a complicated mechanism which releases histamine, interferes in prostaglandin metabolism, may be related to serotonin mechanism, and may involve the cholinergic system.⁶ Histamine is clearly involved. The typical niacin flush is



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identical with the flush produced by an injection of histamine. It is dampened down, if not prevented entirely, by antihistamines and by some of the original tranquilizers such as chlorpromazine. The adaptation to niacin is readily explained by the reduction in histamine in the storage sites such as the mast cells.

When these are examined after a dose of histamine, these cells contain empty vesicles which contained the histamine and also heparinoids. If the next dose is spaced closely enough, there will have been no time for the storage sites to be refilled, and therefore less histamine will be available to be released. After there is complete adaptation to niacin, a rest of several days will start the flushing cycle again. This decrease in histamine has some advantage in reducing the effects of rapidly released histamine.

Dr. Edmond Boyle found that guinea pigs treated with niacin were not harmed by anaphylactic shock. Because the flush is relatively transient, it can not be involved in the lowering of cholesterol, which remains in effect as long as niacin is continued. Prostaglandins appear to be involved. Thus, aspirin⁷ and indomethacin⁸ reduce the intensity of the flush⁹.

Boyle found that niacin increased basophil leukocyte count. These white blood cells store histamine and heparin, and protect the body against microorganisms causing disease. We earlier implicated a histamine- glycosaminoglycan histaminase system as well as histamine in lipid absorption and redistribution. Boyle suggested that ***the improvement caused by niacin is much greater than can be explained by its effect on cholesterol.*** He thought it might be due to the release of histamine and to the eventual reduction in the intravascular "sludging" of blood cells."¹⁰ Cheng et al. presented evidence that prostaglandins are involved in the niacin flush but they admit "the flushing is not completely understood."¹¹ I am sorry the histamine idea was shelved, as I think there is powerful evidence that it too is involved in the flushing process.

Probably all these systems are interrelated. When histamine is injected subcutaneously (under the skin) there is almost an immediate flush, which is indistinguishable from the niacin flush in distribution and intensity. However, when niacin is taken along with histamine, the flush is not immediate. It may come on much more slowly unless histamine is injected intravenously, in which case the flush is immediate. The flush that occurs following injection of niacin alone is identical to the flush observed when histamine is injected subcutaneously. The niacin flush, however, typically is not associated with a decrease in blood pressure as it is with the histamine flush.

Factors in Flushing



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The rapidity with which the flush appears depends upon the concentration of niacin achieved. When taken by mouth with a meal or snack, the rate of absorption largely depends on the amount of food in the stomach: more food means slower absorption and less flushing. Another variable would be taking niacin with either a hot or cold beverage: more flushing is likely with a hot drink.

Medication is another factor. Look up any prescription or over-the-counter drug that you are taking in the *Physicians' Desk Reference* or any of the many online drug facts/side effects/interactions websites. If the niacin is absorbed rapidly, the flush will come on more quickly. Lower doses induce the flush after a time period that varies enormously from person to person.

The flush also depends on unknown resistance factors. A few cannot tolerate even a small dose of niacin, say fifty mg, before they flush, and have such severe flushes that they can not take any niacin except no-flush preparations (discussed in Chapter 1).

A very few cannot even tolerate the no-flush preparations. Their histamine storage sites may be too sensitive and release histamine too quickly. Oddly enough, the best "no-flush preparation" is uninterrupted use of niacin. The flush returns if the niacin is not taken for a day or more, but when it is resumed, the original flush is not as intense.

Schizophrenic patients are usually less disturbed by the flush. Many schizophrenic patients do not flush until after several months and for as long as up to several years after starting to take 3 grams of niacin daily. This inability to flush may be related to their disease, for an appreciable number of schizophrenic patients begin to flush after several years of medication.

This is a good prognostic sign and usually coincides with complete recovery. When I was treating schizophrenic patients with injections of histamine, I increased the dose until their diastolic pressure decreased to zero while they were lying on the bed. Patients remained comfortable throughout. ***Also, elderly patients and, oddly, children do not flush as heavily as adults.*** These observations suggest that there may be a two-phase process occurring. The first involves the prostaglandins, which become activated and stimulate the release of histamine. If the prostaglandin reaction is primary, this would explain why the time to flush is variable, as it would depend upon the amount of histamine released. If the histamine release came first, the flush should be almost immediate. The way to test this hypothesis would be to ***check histamine blood levels as a kind of histamine tolerance test.***

I would expect that after niacin, there would not be an immediate release with little histamine in the blood, and later it would build up in concordance with the intensity of the flush. This two-phase reaction would account for the anti-flush effect of some of the antihistamines and the



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older antipsychotic drugs, which act on the histamine system. It would also explain the effect of aspirin, which acts on the prostaglandin system. (By the way, Kunin, who was the first to observe that aspirin is a partial antidote to the niacin flush, is hardly ever given any credit.)

Niacin Reduces Anaphylactic Shock

While he was working at Henry Wellcome Laboratories, Nobel Laureate Sir Henry Dale discovered that histamine was released during anaphylaxis, a life-threatening allergic reaction. This is a very complex, severe reaction, and apparently acetyl choline and heparin are also involved. Guinea pigs are very sensitive to anaphylactic shock.

Boyle found that if guinea pigs were pretreated for a week with niacin, they did not die after a second dose of protein—a procedure that killed all the animals not pretreated.

Common sense caution: Anaphylactic shock is life threatening. *Work closely with your doctor* if you have any history of this or other severe reactions.

It is generally safe for your doctor to try a supervised therapeutic trial of niacin. It is unwise for you to do it alone. I have used this technique to protect patients against anaphylactic shock.

In 1996 I saw a man who was very fearful for his life. He was peanut sensitive and avoided all traces of peanuts, but over a six-month period he had five major reactions and nearly died from the last one. I advised him to start with ascorbic acid, 1 gram taken after each of three meals. Ascorbic acid destroys histamine, which is why scorbutic patients who are deficient in this vitamin have high blood histamine levels. I wanted to build up his blood ascorbic acid levels. After one week he was to take 100 mg of niacin three times daily after meals. This was designed to release a small amount of histamine with a gentle flush. My hypothesis was that the histamine would be destroyed by the ascorbic acid and would therefore be neutralized to a degree. The niacin dose was increased to 250 mg twice a day. This was his maintenance dose. He came back ten years later for an unrelated problem. He had not taken any niacin the previous two years after his doctor told him to stop. (This is an example of a totally illogical fear of niacin when the same doctor would, with no hesitation, prescribe any and all of the toxic drugs that are available.) I advised him to resume the niacin and to increase the dose until he was on 1 gram after each of three meals. He had no more reactions. I had advised him to be as careful as before. I have also used the combination of niacin and ascorbic acid to protect patients against the hives induced by insect bites. And I found it very helpful in decreasing the intensity of the allergic reactions, no matter what type of substance the patient is reacting to, although it will not completely prevent these reactions.



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To Flush or Not to Flush? The Niacin Flush as Dosage Indicator

I (AWS) have found that the best way to accurately control the flushing sensation is to start with small amounts of niacin and gradually increase the dosage until the first flush is noticed.

If you are new to all of this, one very gentle method is to start with a mere 25 mg three times a day, most likely with each meal. The next day, try 50 mg at breakfast, 25 mg at lunch, and 25 mg at supper. The following day, increase the dose to 50 mg at breakfast, 50 mg at lunch, and 25 mg at supper, and the next day take 50 mg at each of the three meals. Continue increasing the dosage by taking 75 mg, 50 mg, and 50 mg the next day, then 75 mg, 75 mg, and 50 mg, and so on. In this way you have increased at the easy rate of only 25 mg per day. You would continue to increase the dosage by 25 mg per day until the flush occurs. It may take quite a while. It is difficult to predict ***your personal optimum level for niacin because each person is different.***

As a general rule, ***the more you can hold without flushing, the more you need.*** If you flush early, you don't need much niacin.

If flushing doesn't happen until a high level, then your body is utilizing (and needs) the higher amount of the vitamin. Now that you've had your first flush, what's next? Since a flush often indicates temporary saturation of niacin, it is desirable to continue to repeat the flushing, just very slightly, to continue the saturation. This could be done three or more times a day.

Niacin can be taken to saturation at bedtime too, to get to sleep sooner at night. You might be asleep before you even notice the flush.

An important point here is that ***niacin is a vitamin, not a drug.***

It may relax you (a good thing) but it does not "put you to sleep" or anything like it. Niacin is not a hypnotic (sleeping pill). It is ***not habit forming.***

Niacin does not require a prescription because it is that safe.

It is a nutrient that everyone needs each day.

Different people in different circumstances require different amounts of niacin.



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People in fairly good health often choose to increase their doses gradually in order to minimize flushing. If they do increase the dose slowly, what I describe is pretty accurate.

For instance, I have been taking niacin for many years, in daily but varying doses depending on my stress level or dietary intake. I know by the flush when I've had enough for the moment. It is like turning off the hot water when the tub is full enough for a nice bath. ***When you flush, you can literally see and feel that you've taken enough niacin, at least for now.***

The idea is to initially take just enough niacin to have a slight flush. This means a pinkness about the cheeks, ears, neck, fore-arms, and perhaps elsewhere. A slight niacin flush should end in about ten minutes or so. If you take too much niacin, the flush may be more pronounced and longer lasting. ***If you flush beet red for an hour, well, you took too much.***

Large doses of niacin on an empty stomach are certain to cause profound flushing. Most people flush when they start niacin supplementation and gradually get adapted to it unless they stop for a few days and then resume.

A few never get used to it, and they take the no-flush preparations. But the intensity of the flush is very variable. ***Generally, people who need niacin the most flush the least. That includes arthritics, schizophrenics, and people with cardiovascular problems.***

Some schizophrenics do not flush until they get well and *then* they begin to flush. *But the presence of the flush or its intensity cannot be uniquely used to measure the need for niacin, as there are too many variables such as food in the stomach, whether the drink taken with it is hot or cold, the kind of food taken with it, and other medications the patient takes.*

Antipsychotics reduce the intensity of the flush as do aspirin and antihistamines.

Plain niacin may be purchased in tablets at many pharmacies, discount stores, health food stores, or online. Tablets typically are available in 50 mg, 100 mg, 250 mg, or 500 mg dosages.

The tablets are usually scored down the middle so you can break them in half easily. You can break the halves in half too, to get the exact amount you want. An inexpensive pill-cutter may be useful for this purpose. Remember, if a niacin tablet is taken on an empty stomach, a flush will occur (if it is going to occur at all) within about thirty minutes, usually sooner. If niacin is taken right after a meal, a flush may be delayed. In fact, the flush may occur long enough afterward that you forgot that you took the niacin! Don't let the flush surprise you.



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Remember that niacin does this, and you can monitor it easily. You can powder the niacin tablet if you want a flush right away. This is easily done by crushing it between two spoons.

Powdered niacin on an empty stomach can result in a flush within minutes. Take it with a hot beverage and the flush will occur even sooner. Niacin is heat-stable, so the temperature of food will not affect it at all. Dr. Hoffer reported that side effects that may occur with really high doses of niacin are partly or largely offset by taking large doses of vitamin C. Hoffer had his patients take at least as much C as niacin. More vitamin C works even better.

We have already mentioned the most common side effects: the flush, of course, and possibly nausea if you take way too much. Side effects tend to be more common in people with a history of liver disease and/or substantial alcohol use, commonly believed to be indicated by elevation of liver function tests.

We will discuss this and other niacin side effects in the next chapter. It is a good idea to take all the other B-complex vitamins in a separate supplement in addition to the niacin.

The B vitamins, like professional baseball players, work best as a team. Still, the body seems to need proportionally more niacin than the other B vitamins. Even the U.S. Recommended Dietary Allowance (RDA) for niacin is much more than for any other B vitamin. ***Orthomolecular (nutritional) physicians consider the current RDA for niacin of only 18 mg or less to be way too low for optimum health.*** While the powers that be continue to discuss this, it is possible to decide for yourself based on the success of doctors who use niacin for their patients every day.