

FEDERAL TRADE COMMISSION DECISIONS

Findings, Opinions, and Orders

IN THE MATTER OF

NUTRITION 21, ET AL.

CONSENT ORDER, ETC., IN REGARD TO ALLEGED VIOLATION OF
SECS. 5 AND 12 OF THE FEDERAL TRADE COMMISSION ACT

Docket C-3758. Complaint, July 11, 1997--Decision, July 11, 1997

This consent order prohibits, among other things, the two California-based companies and their officer from making unsubstantiated advertising claims for their weight loss and health care products containing chromium picolinate and requires competent and reliable scientific evidence to substantiate any representation concerning the benefits, performance, efficacy or safety of any food, dietary supplement or drug they advertise or sell. The consent order also prohibits misrepresentations of the results of any study, test or research. In addition, the consent order requires the company to send its customers a notice of the Commission's allegations and a request to stop using sales materials that make the challenged claims.

Appearances

For the Commission: *Beth Grossman, Loren G. Thompson and C. Lee Peeler.*

For the respondents: *Stephen McNamara, Hymans, Phelps & McNamara, Washington, D.C.*

COMPLAINT

The Federal Trade Commission, having reason to believe that Nutrition 21, a limited partnership; Selene Systems, Inc., a corporation and general partner of Nutrition 21; and Herbert H. Boynton, individually and as President of Selene Systems, Inc., a corporation ("respondents"), have violated the provisions of the Federal Trade Commission Act, and it appearing to the Commission that this proceeding is in the public interest, alleges:

1. Respondent Nutrition 21 is a California limited partnership with its principal office or place of business at 1010 Turquoise St., Suite 335, San Diego, CA.

2. Respondent Selene Systems, Inc. is a California corporation and a general partner of Nutrition 21. Its principal office or place of business is the same as that of Nutrition 21.

3. Respondent Herbert H. Boynton is President of Selene Systems, Inc., a corporation. Individually or in concert with others, he formulates, directs, and controls the acts and practices of Nutrition 21 and Selene Systems, Inc., including the acts or practices alleged in this complaint. His principal office or place of business is the same as that of Nutrition 21.

4. Respondents have manufactured, advertised, offered for sale, sold, and distributed Chromium Picolinate for use in dietary supplements. Chromium Picolinate is a product subject to the provisions of Sections 12 and 15 of the Federal Trade Commission Act. The United States Department of Agriculture holds the patent on Chromium Picolinate, and Nutrition 21 holds the exclusive license to manufacture and sell Chromium Picolinate.

5. The acts and practices of respondents alleged in this complaint have been in or affecting commerce, as "commerce" is defined in Section 4 of the Federal Trade Commission Act.

6. Respondents have disseminated or have caused to be disseminated advertisements and promotional materials for Chromium Picolinate, including but not necessarily limited to the attached Exhibits A-G. These advertisements and promotional materials contain the following statements:

A. Lose the Fat but Keep the Muscle . . .

Chromium Picolinate

At last there is a safe nutritional supplement that helps you lose unwanted fat more easily and quickly, while retaining vital muscle tissue. Now you can have a trimmer, firmer, leaner body.

LOSE THE FAT BUT KEEP THE MUSCLE

Most dieters who achieve significant weight loss lose far too much lean body mass (muscle and organ tissue). . . . Even worse, this lessened lean body mass lowers your metabolic rate, making it that much harder to keep the fat off permanently -- the yo-yo syndrome!

There is now excellent scientific evidence that Chromium Picolinate can accelerate fat loss while helping to preserve or even increase muscle.

CONVINCING NEW EVIDENCE

Overweight adults were recruited by a prominent San Antonio weight loss clinic to participate in a weight loss study. About half of the volunteers received supplemental Chromium Picolinate (200 or 400 micrograms chromium daily), while the others received placebos. Neither the participants nor the doctors evaluating them knew who was getting the chromium (a "double-blind" study). The volunteers were not placed on any specific diet or exercise regimen, although most of them were motivated to lose weight. After only 60 days, these were the impressive results:

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Complaint

The changes in the placebo group were negligible. But the Chromium Picolinate group, on average, lost over 4 pounds of fat while gaining nearly a pound and a half of lean muscle for a Net Physique Enhancement of 5.6 pounds.

Another double blind-study was conducted in young off- season football players participating in a six-week weight-training program. The results were much the same: more muscle, less fat with Chromium Picolinate. Chromium Picolinate more than doubled the net benefits of exercise alone.

LEANER AND FIRMER

Because many people gain muscle with Chromium Picolinate, their weight loss in pounds doesn't accurately reflect the benefits of chromium. Most users report that event [sic] a modest weight loss as shown on the bathroom scale is accompanied by lost inches and smaller clothing sizes. They look and are leaner and firmer. Chromium Picolinate promotes fat loss, while enhancing the muscle that assures a trim athletic physique.

HOW DOES CHROMIUM PICOLINATE WORK?

Controls Hunger Many people report that Chromium Picolinate helps to control appetite, especially sugar cravings. It is believed that chromium sensitizes the "glucostat" in the brain that monitors blood sugar availability and "tells" you when you're hungry or not hungry.

"Spare" Protein . . . By "sensitizing" muscle to insulin, Chromium Picolinate helps to preserve muscle in dieters so that they "burn" more fat and less muscle. Preservation of lean body mass has an important long-term positive effect on metabolic rate, helping dieters keep off the fat they've lost.

Stimulates Metabolism It promotes efficient metabolism by aiding the thermogenic (heat producing) effects of insulin. Insulin levels serve as a rough index of the availability of food calories, so it's not at all surprising that insulin stimulates metabolism.

HOW MUCH CHROMIUM PICOLINATE SHOULD I TAKE FOR OPTIMAL WEIGHT LOSS?

Clinical trials with 200 to 400 micrograms of chromium daily produced significant benefits. Larger individuals and those engaged in strenuous work or exercise may see better results with higher levels -- up to a maximum of 400 micrograms daily.

PUTTING IT ALL TOGETHER

The best thing about Chromium Picolinate is that it makes other sensible weight control efforts more effective. Many people report that they have tried diet and exercise before, but say that they didn't get good results until they added Chromium Picolinate. . . .

Chromium Picolinate, all by itself, isn't likely to make a fat person thin. But it can be the decisive component of an overall strategy for long-term weight control and, in the bargain, make an important contribution to good health.

(Exhibit A) (references omitted)

B. WEIGHT LOSS, FAT LOSS AND MUSCLE LOSS
or "How to Break the String of Yo-Yo Diets"

CLEARLY, THE KEY TO BREAKING THIS DISCOURAGING CYCLE OF EVER MORE FAT, EVER LESS MUSCLE, IS LOSING FAT WHILE PRESERVING--OR EVEN INCREASING--MUSCLE. . . .

This is precisely what Dr. Gilbert Kaats and his colleagues achieved in a recently completed study

One hundred fifty men and women were asked to join in a weight loss study. Roughly half were given supplemental Chromium Picolinate (200 or 400 micrograms chromium daily), while the others got a placebo. They were not placed on any specific diet or exercise regimen, although most were trying to lose weight. . . . After 72 days, these were the impressive results:

The changes in the placebo group were insignificant. However the Chromium Picolinate group, on average, lost over 4 pounds of fat while gaining nearly a pound and a half of lean muscle!

The review of clinical trials reported that supplementation with Chromium Picolinate:

- reduced total serum cholesterol and LDL, the "bad" cholesterol
- reduced elevated blood sugar levels and glycosylated hemoglobin in diabetics
- significantly reduced body fat and increased muscle in exercising individuals.

Chromium is an essential nutrient that is in short supply in 90% of typical U.S. diets. . . .

CHROMIUM PICOLINATE: Take daily, 200 to 400 micrograms to preserve muscle while you lose weight

Chromium Picolinate has other important attributes:

- preserving or enhancing muscle; it maintains or increases the metabolic rate making weight loss easier.
- significantly lowering elevated serum cholesterol
- significantly lowering elevated blood sugar
- helping to control appetite. A great many people report reduced appetite, especially sugar cravings.

(Exhibit B)

C. CHROMIUM PICOLINATE:

The yeast-free BioActive Chromium with Important Clinically Proven Benefits

Chromium is vitally important to good health because it is essential to the efficient function of the hormone insulin. Poor responsiveness to insulin is very common and is linked with increased risk for overweight, heart disease, elevated blood fat, high blood pressure, and diabetes.

Yet chromium's nutritional status in the U.S. is very poor: 90% of American diets provide less than the minimal amount recommended by the National Academy of Sciences, and most nutritional forms of chromium are poorly absorbed.

Chromium Picolinate is well absorbed and highly bioactive. In clinical trials at major hospitals and universities it has been shown to:

- significantly reduce body fat
- help build lean, strong muscles
- lower elevated cholesterol
- reduce elevated blood sugar in diabetics

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Complaint

By mechanisms that are not yet fully understood nutritional (trivalent) chromium is absolutely essential to the function of insulin.

A great many U.S. adults have poor insulin function. They produce normal or even elevated amounts of insulin, but their body's tissues are relatively insensitive to it. Indeed, recent studies show that at least one in four adults has reduced sensitivity to insulin.

The majority of these people don't become overtly diabetic because their pancreas compensates by secreting increased amounts of insulin. In these people, insulin insensitivity is a "silent" problem that can be diagnosed only by observing increased blood insulin levels and/or modest impairments of glucose tolerance.

There is increasing evidence that this "silent" insulin insensitivity is in fact a serious medical problem.

But there is now evidence that insulin insensitivity may itself lead to weight gain, owing to an impairment of "dietary thermogenesis. . . ."

Insulin insensitivity almost certainly also impairs the development of muscle.

Diabetes As noted, most people can compensate for modest impairments of insulin sensitivity by producing more insulin. But in some people, as insulin sensitivity continues to decline, the pancreas is unable to keep up with the increased need for insulin, and "adult-onset" (Type II) diabetes results. In this syndrome, there is a significant net reduction in insulin activity, resulting in persistent elevations of blood sugar even after an overnight fast. Adult-onset diabetes . . . is responsible for a tremendous toll in premature death and disability. Long-term diabetes can lead to heart disease, arterial disease (often requiring leg amputation), blindness, kidney failure, and nerve damage.

POOR CHROMIUM NUTRITION AND METABOLISM

Diets that are too high in fats and too low in fiber-rich unrefined foods, inadequate exercise, as well as overweight, are all major factors contributing to poor insulin responsiveness. Poor chromium nutrition also plays a vitally important role.

Refined American diets are very poor sources of chromium. The National Academy of Sciences has recommended a daily chromium intake of 50 to 200 micrograms. Yet studies by the U.S. Department of Agriculture indicate that 90% of Americans receive less than 50 micrograms daily--and 25% receive less than 20 micrograms!

This problem is compounded because most sources of chromium are not efficiently absorbed. . . .

In addition, there is evidence that many people may have defective chromium metabolism. . . . Diabetics also tend to have lower chromium levels.

In brief, impaired insulin sensitivity is very prevalent and is associated with increased risk for overweight, heart disease, diabetes, and high blood pressure.

Chromium, which is crucial for proper insulin function, is in short supply in most American diets, is often inefficiently absorbed, and may not be efficiently metabolized by many people.

THE SOLUTION: BIOACTIVE CHROMIUM

These considerations emphatically suggest the desirability of dietary chromium supplementation. But not all chromium supplements are equally effective. In clinical studies, inorganic chromium (*e.g.* chromic chloride) has been beneficial for mild impairments of glucose tolerance, but has not proven useful in overt diabetes or for lowering elevated cholesterol. In contrast, large intakes of brewer's yeast, a rich source of organically bound chromium, have been found useful for treating diabetes and high cholesterol. . . .

The most likely explanation is that some organic chromium complexes are more readily taken up by cells than is inorganic chromium.

CHROMIUM PICOLINATE

Scientists at the U.S. Department of Agriculture have developed an excellent, perhaps an ideal organic complex of chromium. . . . Chromium Picolinate thus proves exceptionally effective for achieving intestinal absorption and intracellular uptake of chromium.

(Exhibit C) (references omitted)

D. CHROMIUM PICOLINATE -- THE CLINICAL PROOF. . .

The initial studies with Chromium Picolinate have yielded exciting results:

Physique Enhancement for Athletes

Young male athletes engaged in an exercise program at Bemidji State University (Minnesota) received daily doses of Chromium Picolinate (200 micrograms chromium) or a matching placebo. After 6 weeks, the chromium group gained 44% more lean body mass than the placebo group. Even more striking, the chromium group lost 23% of its body fat as compared to only 7% in the placebo group. These differences were highly statistically significant.

A similar study has been conducted at Louisiana State University with men and women beginning weight-training students. A preliminary report indicates that Chromium Picolinate accelerated the increase in muscle size in both men and women, and, in the women, nearly doubled the increase in lean body mass.

Cholesterol Reduction In a double-blind crossover study conducted by the medical staff of San Diego's Mercy Hospital, people with elevated cholesterol received a daily dose of Chromium Picolinate providing 200 micrograms chromium, alternating with a matching placebo. After 6 weeks of chromium, LDL cholesterol . . . had dropped 10% Inorganic chromium has not been reported to lower elevated cholesterol.

Adult-Onset Diabetes A similar double-blind crossover trial was conducted at Mercy Hospital with Type II (adult-onset) diabetics. After 6 weeks of Chromium Picolinate (200 micrograms of chromium), fasting blood sugar was lowered by 18% . . .

This is the first time that a nutritional intake of chromium *per se* has been reported to improve glucose metabolism in overt diabetes. (Exhibit D) (references omitted)

E. Chromium Picolinate --The Results Speak For Themselves

Two well designed, well executed studies prove that Chromium Picolinate accelerates muscle growth and reduces body fat. Such a statement cannot be made for any other chromium compound.

A recent issue of *MUSCLE & FITNESS* presented an article calling attention to the newly proven anabolic role of chromium. Body builders have believed for

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Complaint

a long time that chromium helps build muscle. What is new is that scientists now have measured, during a clinical study, the actual gains that chromium produces.

It no longer makes any difference what people "think" about chromium or about the different forms of chromium because the facts are in -- facts determined by clinical tests conducted according to acceptable scientific standards. And they have shown that one form of chromium --Chromium Picolinate--does accelerate muscle growth. (Exhibit E)

F. Lose The Fat; Keep The Muscle With Chromium Picolinate.

Here's Why You Need Chromium Picolinate.

Like iron, calcium, and zinc, chromium is a nutritionally essential mineral. Its most biologically available form, Chromium Picolinate, can have nutritionally helpful effects on your health and fitness. Combining it with a lifestyle of low-fat eating and everyday exercise can improve both health and fitness.

Lose Fat and Keep Muscle with Chromium Picolinate.

Nine confirming scientific studies with humans and animals demonstrate a significant reduction in body fat when Chromium Picolinate is added to the diet. These studies also show a consistent trend toward increased lean muscle. Muscle burns calories, fat merely stores calories.

Chromium Picolinate Helps Maintain A Normal Healthy Metabolism.

Insulin has very important functions: It maintains the normal nutritional metabolism of protein (muscle building), carbohydrate (major energy source), and fat (energy storage). It also influences appetite control and calorie-burning. Insulin simply can't perform normally without an adequate supply of chromium.

Chromium is Undersupplied in 90% of Adult Diets.

The National Academy of Sciences recommends 50 to 200 micrograms of chromium daily. U.S. Department of Agriculture studies show that men get only 33 micrograms and women get only 25 micrograms, on average, from their food. So, help yourself stay lean and healthy. Choose low-fat meals; choose exercise that you enjoy; and choose Chromium Picolinate to supplement your daily diet. Do it for the healthy edge. Do it for life!

(Exhibit F)

G. "Lose the Fat; Keep the Muscle" with Chromium Picolinate. Millions of Americans are trying to lose weight and many succeed -- but only temporarily.

Typically, up to 30% of lost weight is muscle. This lowers your metabolic rate and slows calorie burning. Muscles burn calories even while you sleep; fat merely stores calories. This lowered metabolic rate makes it hard to keep lost pounds from creeping back. Result: the "yo-yo" syndrome in which weight is repeatedly lost and then regained. After each lose-gain cycle the proportion of fat increases. This can result in a permanently depressed metabolic rate, persistent overweight. . . and utter frustration.

To break this vicious cycle it is important to lose only fat while maintaining, or even increasing muscle.

Most diet plans not only don't work, they're counterproductive. Permanent weight loss requires a permanent commitment. Steps 1, 2, and 3 in the box [below] are endorsed by nearly all weight loss experts. Studies show that optimal chromium nutrition, Step 4, is also an effective part of long-term fat loss programs. Chromium is in short supply in 9 out of 10 American diets and it's absolutely essential for normal insulin function. Normal insulin activity is crucial for hunger control and

calorie-burning. Studies show that 200-400 micrograms of chromium daily, as Chromium Picolinate, results in significant fat loss while muscle tissue is maintained or even increased. Dr. Gil Kaats of San Antonio reports, "During six weeks on Chromium Picolinate, overweight volunteers lost more than four pounds of fat, while muscle increased by nearly a pound and a half."

FOUR STEPS TO A LEANER FIRMER BODY

1. Reduce Dietary Fat Consumption to No More Than 20% of Calories--Eating Fat Makes You Fat
2. Increase Dietary Fiber--Low in Calories; High in Nutrients
3. Get Regular Aerobic Exercise--and Burn Fat Calories!
4. Take Chromium Picolinate Daily--Lose the Fat; Keep the Muscle
(Exhibit G)

7. Through the means described in paragraph six, respondents have represented, expressly or by implication, that:

- A. Chromium Picolinate significantly reduces body fat.
- B. Chromium Picolinate causes significant weight loss.
- C. Chromium Picolinate causes significant weight loss without dieting or exercise.
- D. Chromium Picolinate causes long-term or permanent weight loss.
- E. Chromium Picolinate increases lean body mass and builds muscle.
- F. Chromium Picolinate significantly increases human metabolism.
- G. Chromium Picolinate controls appetite and craving for sugar.
- H. Chromium Picolinate significantly reduces total and LDL serum cholesterol.
- I. Chromium Picolinate significantly lowers elevated blood sugar levels.
- J. Chromium Picolinate is effective in the treatment and prevention of diabetes.
- K. Ninety percent of U.S. adults do not consume diets with sufficient chromium to support normal insulin function, resulting in increased risk of overweight, heart disease, elevated blood fat, high blood pressure, and diabetes.

8. Through the means described in paragraph six, respondents have represented, expressly or by implication, that they possessed and relied upon a reasonable basis that substantiated the representations set forth in paragraph seven, at the time the representations were made.

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Complaint

9. In truth and in fact, respondents did not possess and rely upon a reasonable basis that substantiated the representations set forth in paragraph seven, at the time the representations were made. Therefore, the representation set forth in paragraph eight was, and is, false and misleading.

10. Through the means described in paragraph six, respondents have represented, expressly or by implication, that scientific studies demonstrate that Chromium Picolinate:

- A. Significantly reduces body fat.
- B. Causes significant weight loss.
- C. Causes significant weight loss without dieting or exercise.
- D. Causes long-term or permanent weight loss.
- E. Increases lean body mass and builds muscle.
- F. Significantly reduces total and LDL serum cholesterol.
- G. Significantly lowers elevated blood sugar levels.
- H. Is effective in the treatment and prevention of diabetes.

11. In truth and in fact, scientific studies do not demonstrate that Chromium Picolinate:

- A. Significantly reduces body fat.
- B. Causes significant weight loss.
- C. Causes significant weight loss without dieting or exercise.
- D. Causes long-term or permanent weight loss.
- E. Increases lean body mass and builds muscle.
- F. Significantly reduces total and LDL serum cholesterol.
- G. Significantly lowers elevated blood sugar levels.
- H. Is effective in the treatment and prevention of diabetes.

Therefore, the representations set forth in paragraph ten were, and are, false or misleading.

12. The acts and practices of respondents as alleged in this complaint constitute unfair or deceptive acts or practices, and the making of false advertisements, in or affecting commerce in violation of Sections 5(a) and 12 of the Federal Trade Commission Act.

Complaint

124 F.T.C.

EXHIBIT A



Lose the Fat

but Keep the

Muscle . . .

Chromium Picolinate

*At last there is a safe
nutritional supplement
that helps you lose
unwanted fat more
easily and quickly, while
retaining vital muscle
tissue. Now you can have
a trimmer, firmer,
leaner body.*



NUTRITION21

1010 Turquoise Street, Suite 335
San Diego, CA 92109 619/488-1021 FAX 619/488-7316

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EXHIBIT A

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Complaint

EXHIBIT A

LOSE THE FAT BUT KEEP THE MUSCLE

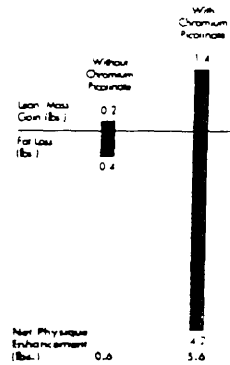
Most dieters who achieve significant weight loss lose far too much lean body mass (muscle and organ tissue). This not only diminishes strength and agility but also affects appearance. With less muscle, pleasing curves flatten, chests sink, arms and legs look spindly. Even worse, this lessened lean body mass lowers your metabolic rate, making it that much harder to keep the fat off permanently - the yo-yo syndrome!

There is now excellent scientific evidence that Chromium Picolinate can accelerate fat loss while helping to preserve or even increase muscle.

CONVINCING NEW EVIDENCE

Overweight adults were recruited by a prominent San Antonio weight loss clinic to participate in a weight loss study (1). About half of the volunteers received supplemental Chromium Picolinate (200 or 400 micrograms chromium daily), while the others received placebos. Neither the participants nor the doctors evaluating them knew who was getting the chromium (a "double-blind" study). The volunteers were not placed on any specific diet or exercise regimen, although most of them were motivated to lose weight. After only 60 days, these were the impressive results:

The changes in the placebo group were negligible. But the Chromium Picolinate group, on average, lost over 4 pounds of fat while gaining nearly a pound and a half of lean muscle for a Net Physique Enhancement of 5.6 pounds.

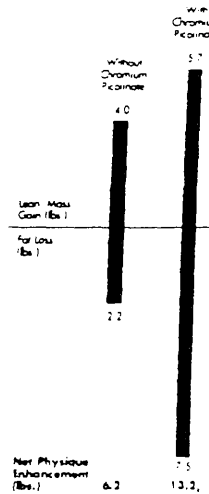


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The effect in men alone was even more striking, with an average fat loss of 11 pounds. Interestingly, the greatest enhancement of muscle mass was seen in the older subjects, those above age 40, who gained 2.1 pounds of muscle while losing 4.4 pounds of fat. This is especially important since muscle tissue typically declines with age.

Another double-blind study was conducted in young off-season football players participating in a six-week weight-training program (2). The results were much the same: *more muscle, less fat* with Chromium Picolinate. Chromium Picolinate more than doubled the net benefits of exercise alone.

These findings are also confirmed by animal studies. Scientists at Louisiana State University recently reported that young pigs receiving Chromium Picolinate achieved 7% more muscle with 21% less body fat as compared to pigs on an identical diet *not* receiving Chromium Picolinate (3).



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Complaint

124 F.T.C.

EXHIBIT A

LEANER AND FIRMER

Because many people gain muscle with Chromium Picolinate, their weight loss in pounds doesn't accurately reflect the benefits of chromium. Most users report that even a modest weight loss as shown on the bathroom scale is accompanied by *lost inches and smaller clothing sizes*. They look and are leaner and firmer. Chromium Picolinate promotes *fat loss* while enhancing the muscle that assures a trim athletic physique.

WHAT IS CHROMIUM PICOLINATE?

Chromium Picolinate is an exceptionally bioactive source of the essential mineral chromium. Chromium plays a vital role in "sensitizing" the body's tissues to the hormone insulin. Weight gain in the form of fat tends to impair sensitivity to insulin and thus, in turn, makes it harder to lose weight (4).

HOW DOES CHROMIUM PICOLINATE WORK?

Controls Hunger Many people report that Chromium Picolinate helps to control appetite, especially sugar cravings. It is believed that chromium sensitizes the "glucostat" in the brain that monitors blood sugar availability and "tells" you when you're hungry or not hungry.

"Saves" Protein Insulin directly stimulates protein synthesis and retards protein breakdown in muscles (5, 6). This "protein-sparing" effect of insulin tends to fall off during low-calorie diets as insulin levels decline, resulting in loss of muscle and organ tissue. By "sensitizing" muscle to insulin, Chromium Picolinate helps to preserve muscle in dieters so that they "burn" more fat and less muscle. Preservation of lean body mass has an important long-term positive effect on metabolic rate, helping dieters keep off the fat they've lost.

Stimulates Metabolism It promotes efficient metabolism by aiding the thermogenic (heat producing) effects of insulin. Insulin levels serve as a rough index of the availability of food calories, so it's not at all surprising that insulin stimulates metabolism (4).

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HOW MUCH CHROMIUM PICOLINATE SHOULD I TAKE FOR OPTIMAL WEIGHT LOSS?

Clinical trials with 200 to 400 micrograms of chromium daily produced significant benefits. Larger individuals and those engaged in strenuous work or exercise may see better results with higher levels - up to a maximum of 400 micrograms daily.

MORE IMPORTANT DIET ADVICE

Excellent chromium nutrition is an essential component of weight control. Here are other important keys to a trimmer body:

Avoid Dietary Fat. Remember this *fat makes you fat*. Dietitians traditionally have recommended overall calorie restrictions for weight control, but it's now clear that fat calories should be specifically avoided (9, 10). Why? Most ingested fat is quickly stored in your adipose (fat) tissue. Once absorbed, it doesn't provide feedback control to "tell" you that you're not hungry. That's because it isn't directly available as an energy source for the brain. And, unlike carbohydrate or protein, it doesn't trigger the insulin-dependent thermogenic mechanisms that produce a compensatory, and therefore fat-reducing, increase in your metabolic rate.

In contrast, complex carbohydrates (as in bread, potatoes, fruits and vegetables) provide good feedback control of hunger while stimulating an increased metabolic rate. *Mechanisms that are enhanced by Chromium Picolinate.*

For best results, keep dietary fat below 20% of total calories consumed. Olives, avocados, nuts, vegetable oil, and margarine are all extremely high in fat. However most other foods (not of animal origin) are quite low in fat and are great for dieters. Among animal foods, skinless white poultry and fish (prepared without frying) are good, as are non-fat and low-fat yogurt and cottage cheese, skim and 1% milk, and egg whites (not yolks). When you must use oil, use it very sparingly.

Regular Exercise. Most people believe that the weight control benefits of exercise result merely from calories burned during exercise. But in fact, exercise also produces a thermogenic response.

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Complaint

EXHIBIT A

your metabolic rate that is quite important for weight control (11). (12) Chromium Picolinate helps this effect because insulin plays an important role in increasing the metabolic rate (12). Regular aerobic exercise is best for enhancing metabolism and burning fat, while weight-lifting has a beneficial effect on metabolism by increasing muscle mass. Muscle cells use energy; fat cells merely store it.

Calorie Restriction with Adequate Protein.

By avoiding fatty foods, getting regular exercise, and supplementing with Chromium Picolinate, some people can lose fat and substantially improve their physiques, even without any special effort to control their calorie intake. However, people who want to lose weight quickly, or who have a lot of fat to lose, or who have slow metabolisms, may wish to accelerate the process by restricting their calorie intake (that is, going on a diet). If you do substantially reduce your calorie intake, make sure that you get ample protein by including high-protein, low-fat foods in your diet - this is important along with Chromium Picolinate for minimizing loss of muscle. If you are severely restricting calories for weeks at a time, a doctor's supervision is essential. Remember that "quick fix" diets aren't likely to do you any permanent good unless you follow up with an abiding commitment to low-fat foods and exercise.

PUTTING IT ALL TOGETHER

The best thing about Chromium Picolinate is that it makes other sensible weight control efforts more effective. Many people report that they have tried diet and exercise before, but say that they didn't get good results until they added Chromium Picolinate. Now they're enthusiastic about low-fat eating plus exercise and are ever-so-proud of their beautiful new bodies! When your efforts are rewarded by good results, you're more likely to keep trying.

Chromium Picolinate, all by itself, isn't likely to make a fat person thin. But it can be the decisive component of an overall strategy for long-term weight control and, in the bargain, make an important contribution to good health.

REFERENCES

1. Kaas GR, Fisher JA, Blum K. The effects of chromium picolinate supplementation on body composition in different age groups. Abstract. American Aging Association, 21st Annual Meeting, Denver, October 1991.
2. Evans GW. The effect of chromium picolinate on insulin controlled parameters in humans. *Int J Biosoc Med Res* 1989; 11: 163-180.
3. Page TG, Ward TL, Southern LL. Effect of chromium picolinate on growth and carcass characteristics of growing-finishing pigs. *J Animal Sci* 69, Suppl 1: Abstract #03, 1991.
4. Felig P. Insulin is the mediator of feeding-related thermogenesis; insulin resistance and/or deficiency results in a thermogenic defect which contributes to the pathogenesis of obesity. *Clin Physiol* 1984; 4: 267-273.
5. Kimball SR, Jefferson LS. Cellular mechanisms involved in the action of insulin on protein. *Synthesis, Diabetes, Metab Rev* 4: 773, 1988.
6. Fukugawa NK, Munzer KL, Rowe JW, et al. Insulin-mediated reduction of whole body protein breakdown. *J Clin Invest* 76: 2306, 1985.
7. Fehlmann M, Frechet P. Insulin and glucagon stimulation of (Na+K+)-ATPase transport activity in isolated rat hepatocytes. *J Biol Chem* 256: 7449, 1981.
8. Pittman GS, Suda AK, Chambers JB, Jr., Ray GY. Impaired 3,5,3'-triiodothyronine (T₃) production in diabetic patients. *Metabolism* 28: 333, 1979.
9. Danforth E, Jr. Diet and Obesity. *Am J Clin Nutr* 41: 1132, 1985.
10. McCarty MF. The unique merits of a low-fat diet for weight control. *Med Hypoth* 20: 183, 1986.
11. Bielinska R, Schutz J, Jequier E. Energy metabolism during the postexercise recovery in man. *Am J Clin Nutr* 42: 69, 1985.
12. Young JC, Treadwell JL, Balon TW, Garvas HP, Ruderman NB. Prior exercise potentiates the thermic effect of a carbohydrate load. *Metabolism* 35: 1046, 1986.

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EXHIBIT B



WEIGHT LOSS, FAT LOSS AND MUSCLE LOSS OR "How to Break the String of Yo-Yo Diets"

In his syndicated column *Nutrition News* dated October 16, 1991, the eminent nutritionist Dr. Jean Mayer states,

"Evidence shows that the amount of fat stored in the body increases with each cycle of up-and-down dieting. When a person loses weight, both fat and muscle tissue are shed. When the weight is put back, however, it tends to be made up of a greater proportion of fat and less muscle, leaving the person 'fatter' than ever.

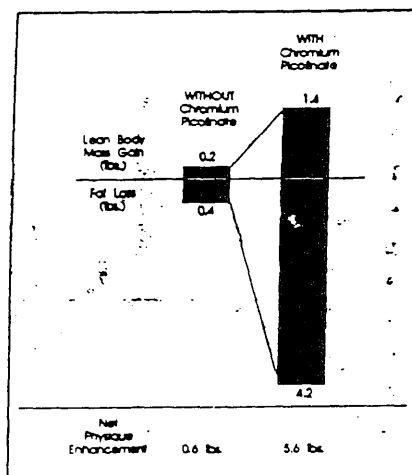
"Consider a 5-foot-5 woman weighing 145 pounds, of which 51 pounds are fat, or 35 percent of her total body weight. After dieting for a few months, she loses 20 pounds — 13 in the form of fat and the rest as muscle tissue and water. She now weighs 125 pounds, including 38 pounds (30 percent) of fat. During the next six months, however, all the lost weight creeps back. But the regained weight is composed of 17 pounds of fat and only three pounds of muscle tissue and water. Thus, the woman weighs what she did originally, but she's carrying more fat—55 pounds, or 38 percent. Each time the cycle is repeated, she's likely to become 'fatter'."

CLEARLY, THE KEY TO BREAKING THIS DISCOURAGING CYCLE OF EVER MORE FAT, EVER LESS MUSCLE, IS LOSING FAT WHILE PRESERVING—OR EVEN INCREASING—MUSCLE. (A more accurate term is lean body mass which includes not only muscle, but also organ tissue such as heart, liver, kidney, etc.)

This is precisely what Dr. Gilbert Kaats and his colleagues achieved in a recently completed study that was reported on October 11 at the annual meeting of the American Aging Association.

One hundred fifty men and women were asked to join in a weight loss study. Roughly half were

given supplemental Chromium Picolinate (200 or 400 micrograms chromium daily), while the others got a placebo. They were not placed on any specific diet or exercise regimen, although most were trying to lose weight. Neither the volunteers nor their doctors knew who was getting the chromium which made it a "double-blind" study. After 72 days, these were the impressive results:



The changes in the placebo group were insignificant. However the Chromium Picolinate group, on average, lost over 4 pounds of fat while gaining nearly a pound and a half of lean muscle! A Net Physique Enhancement of 5.6 pounds.

The older people in this study (average age 55) did even better than the younger people (average

Continued on page 3

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EX B

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Complaint

EXHIBIT B

04/27/95 15:13 ☎ 404 347 4725 ATLANTA --- FEDERAL TRADE 2002 012

2 Chromium Picolinate and Diabetes / Journal Reviews Studies / Pigs Slim Down

NOTED PHYSICIAN
RECOMMENDS CHROMIUM
PICOLINATE FOR DIABETIC
PATIENTS

"I advise my diabetic patients to supplement their diet with a 200 microgram a day tablet of chromium picolinate, a supplement available at health food stores and pharmacies. It may help make it easier to control sugar levels."

With those words, Isadore Rosenfeld, M.D., joined the growing list of medical authorities who endorse the health benefits of Chromium Picolinate. The quote is from his new book, *THE BEST TREATMENT* (Simon & Schuster — 1991).

Dr. Rosenfeld is a clinical professor of medicine at the New York Hospital-Cornell Medical Center. He was a commentator on the long-running, popular, nationally syndicated television series "Hour Magazine" and author of several top-selling books on nutrition and health.

Other authors who endorse the superior benefits of biologically active Chromium Picolinate include Jeffrey Fisher, M.D., *THE CHROMIUM PROGRAM* (Harper & Row Publishers—1990); Sheldon Saul Hendler, M.D., Ph.D., *THE DOCTORS' VITAMIN AND MINERAL ENCYCLOPEDIA* (Simon & Schuster—1990); Edwin Hellniak, M.D., *THE PRINCETON PLAN* (St. Martin's Press—1990); Ronald Hoffman, M.D., *THE DOCTORS BOOK OF HOME REMEDIES* (Rodale Press—1990); Julian M. Whitaker, M.D., *HOW TO LOSE WEIGHT WITHOUT DIETING and 99 SECRETS FOR A LONGER HEALTHIER LIFE* (Phillips Publishing—1991); and Richard A. Passwater, Ph.D., *THE NEW SUPERNUTRITION* (Pocket Books—1991).

NUTRITION JOURNAL
REVIEWS CHROMIUM
PICOLINATE

THE JOURNAL OF APPLIED NUTRITION presented an extensive review of the clinical studies with Chromium Picolinate in its October issue (Vol. 43, No. 1, 1991). The Journal is the official publication of the International Academy of Nutrition and Preventive Medicine.

This publication is of special importance to the health food industry because it is the first scientific journal dedicated to the concept that increased dietary intakes of nutritional factors are efficacious against numerous human diseases.

Dr. Brian Leibovitz, editor, says, "The new focus of *THE JOURNAL OF APPLIED NUTRITION* is on supplementary macro- and micro-nutrients in the prevention and treatment of disease as well as in the maintenance of optimal health. An enormous, and ever-increasing volume of data supports this concept."

The review of clinical trials reported that supplementation with Chromium Picolinate:

- reduced total serum cholesterol and LDL, the "bad" cholesterol
- reduced elevated blood sugar levels and glycosylated hemoglobin in diabetics
- significantly reduced body fat and increased muscle in exercising individuals.

Because of its ability to enhance the activity of insulin, the article in the Journal suggests that additional clinical applications for Chromium Picolinate might be found, such as:

- improved wound healing
- improved immune response
- improved brain function
- reduced risk of heart disease.

PIGS ON CHROMIUM
PICOLINATE LOSE FAT AND
GAIN MUSCLE

Chromium Picolinate supplemented piglets had 21% less carcass fat and 7% more muscle than unsupplemented pigs according to a report delivered to the American Association of Animal Science in August. All other factors were the same. Same breed of pigs. Same feed. Same living conditions. And, yes, they all ate like pigs. The Chromium Picolinate supplemented piglets also had lower cholesterol levels than controls. (*Journal of Animal Science*, Vol. 69, Supp. 1)

Dr. Lee Southern, Tim Page, and T.L. Ward conducted the study of carcass characteristics at the Department of Animal Science at Louisiana State University. In the trial they used chromium chloride, picolinic acid, and Chromium Picolinate. Only those animals supplemented with Chromium Picolinate showed favorable results.

Three separate carefully controlled studies have now been conducted with piglets, two at Louisiana State University and one at Oregon State University. It is reassuring to know that virtually the same beneficial effects demonstrated for humans are confirmed in animal studies.

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