

**AIDS Research &  
Assistance Institute**

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**Flax Hull Lignan Study Results  
2003 – 2006**

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# FLAX HULL LIGNAN U.S. & AFRICAN STUDIES AIDS RESEARCH & ASSISTANCE INSTITUTE

AIDS Research & Assistance Institute has been involved in an ongoing study and implementation campaign with Flax Hull Lignans since 2002. Our organizational goals with this program are two fold:

1. To find all natural foods, supplements and substances that can be used to strengthen the immune system and help battle the physical ramifications of AIDS/HIV and the associated diseases that come as a by-product of a stripped auto-immune system.
2. To make provision of these all-natural products so that the poor, needy and destitute in 3rd world nations can be given hope, quality of life and better physical health while they struggle with AIDS/HIV. Our main focus is HIV Pos. children and orphans in the 3rd world.

We started with 3 rounds of studies, with 100 people in each round taking the product for a 90 day period. Round 1 and 2 were done in the U.S. in 03', with round 3 done in South Africa and Swaziland in 04'. Through the gracious donation process of North Dakota Innovations flax hull producers, we were able to supply the studies with adequate product.

Due to the complex nature of clinical studies, the huge costs in double blind studies, and the huge gap between normalized clinical studies and 3rd world availabilities, ARAI uses anecdotal studies which bring a general understanding of a product's capabilities, as perceived by those taking the product and those administering the product.

## Round 1 & 2

U.S. based, 90 days, 100 individuals with various diseases and ailments including HIV/AIDS, various cancers including breast cancer, prostate cancer, Lymphoma, bone cancer, arthritis, diabetes, hepatitis C, athlete's foot and more.

**Round 1 & 2** consisted of implementing 2 scoops of product (scoop enclosed in canister) per day in water, cereal, foods, etc. Patients filled out a full health survey concerning their current ailments, physical and mental condition, pain levels and hopes for what Flax Hull Lignans could help accomplish by strengthening the immune system. Patients agreed to not change medications or lifestyle during the 90 day process. Patients delivered a 30, 60 and 90 day report giving any noticed changes in health, condition of ailments, etc.

During round 1, we realized that 15% of the patients were experiencing constipation with the fibrous content of Flax Hull Lignans. Those 15% either found a way to increase daily water consumption or they backed down to 1 scoop of product per day.

76% of patients studied found some type of positive response to the product study within 30 days, many responses were dramatic. 52% of patients had a positive response within the first 30 days, and 91% of patients studied had a positive response to the product study within 90 days. Responses included dramatic reduction in size of cancers, reduction in insulin needs with diabetics and blood sugar levels coming into order, HIV/AIDS symptoms decreasing or disappearing, general feeling of vitality, HIV CD4 counts strengthening and viral loads diminishing. 10% of patients noticed no change in health during the 90 day study.

**Round 2** brought about 1 change only. During round 1, we noticed that among those who backed down their dosage to 1 scoop per day because of constipation issues, those patients still had very positive responses to the product. Therefore, the second 100 patients on Round 2 received only 1 scoop of product per day for 90 days. The results came in exactly the same with 55% of patients having a positive response within the first 30 days, and 90% having a positive response within 90 days, and 0% constipation issues in the group.

It was further realized through Round 1 and 2, that those whom had dramatic changes in health during the first 30 days maintained those changes in health through the entire 90 day period, and most of the impact occurred within the first 30 days of the study. Those with dramatic 30 day results had only minimal continued change through the 60 and 90 day period, but maintained the result gained within the first 30 days. Most changes that were going to occur within the 90 day period - did indeed occur for those patients within the first 30 days.

**Round 3** was performed in Durban, South Africa, Piet Retief, South Africa and Swaziland (*highest AIDS pandemic areas globally*). The 90 day study included 1 scoop of product per day for adults and 1/2 scoop of product per day for children 12 and under. All 100 patients were HIV Positive and 75% experienced AIDS symptoms including (cancer, thrush, mental fatigue and lack of focus, diminished strength, swelling of glands and other various AIDS related symptoms). The African

people responded more quickly to the study, with 64% having a health change within the first 30 days, and 97% noticing a positive health change within the 90 day study.

The higher levels of response were very interesting, and our group could only suppose that the powerful nutritional values of the flax lignan product helped them to increase weight and height, as well as recover from many symptoms of HIV/AIDS.

We are pleased to announce that after 3 rounds of loosely knit studies, we are absolutely confident in the power of Flax Hull Lignans, and their ability to do what we had supposed in the beginning. ARAI has continued to ship flax lignans into the hardest hit rural areas of South Africa and Swaziland with future plans of distribution in other areas of Africa as supply and funding permits.

### **IMPACT ON APATHETIC AFRICAN SOCIETY**

The impact of Round 3 study on the African people was dramatic. Both those who were a part of the Round 3 program, and those who administered the program became intensely interested in how to get increased amounts of this product. The general mindset of the grass roots African society is one of apathy concerning HIV/AIDS because there seems to be absolutely "NO" cure, help or reasonable treatment to help one afflicted. ARAI representatives have noticed the following in Africa:

1. HIV/AIDS is truly at pandemic level in the continent of Africa with societies such as South Africa dealing with multiplied millions infected including millions of children/orphans, spanning from tribal Zulu's to middle and upper class college students in larger cities. The nation of Swaziland is faced with the challenge of national extinction by 2050 if some answer is not delivered before then. Other nations face the same horrific futures if an answer is not given.

2. The medications that have been made available by the U.S. and other nations are not reasonable for impoverished rural South Africans infected because:

a. The reduced cost of the anti-retroviral meds still have a cost to the rural individual, which is up to 3 times the monthly income of an infected rural South African (if they are able to work). Therefore the meds aren't being distributed because they're unaffordable or the rural people don't know that they're available.

b. The power of the meds requires adherence to time sensitive administration and proper storage of some of the meds. Many of those infected don't have a watch, let alone operate by an hourly – time sensitive mind set.

3. The main program model that seems to be predominant in the African nations is one of "education". While this is extremely important to curb the pandemic from spreading to non-infected, there is a huge gap which millions are falling into after they've been infected with HIV. It seems that as long as a person is not infected with HIV, there are resources and education available to help a person or community understand how to "not" get HIV. However, for those millions already infected, there is little hope, little resource and seeming little attention given - as they're the ones with the death sentence written.

a. There is a huge clash between the current educational programs and the Zulu nation historic beliefs and traditions. Many won't adhere to the educational programs because of long time traditional beliefs and lifestyle among many, therefore the infection rates continue to increase.

4. The age ranges most affected by this pandemic include the working class age group, leaving behind only the elderly and orphans - as is the case of Swaziland which faces extinction in 2025 if an answer is not provided.

### **ANSWERS:**

ARAI believes that with the implementation of Flax Hull Lignans into the diet of HIV/AIDS patients, as well as the entire general population for increased immune system strength, that the overall immune health of all involved would strengthen, production levels would increase among the work force and market place, AIDS symptoms would diminish and those who are currently being discarded with no hope could find a place of increased auto-immune health, vitality and a return to social productivity.

Currently, in association with North Dakota Innovations, ARAI is shipping flax lignans into South Africa and Swaziland, with future shipments to include Zimbabwe. Product is being given free of charge to orphans and children with AIDS, as well as HIV pos parents who have children depending on their health and income for living.

ARAI has multiple relationships with governing officials, health practitioners, business owners, corporate CEO's, and relief organizations in the African nations who are moving forward in belief that the answers are "AT HAND AND AVAILABLE". Flax Hull Lignans are a part of that answer to restore health to the African populations.

For further information on ARAI health programs and initiatives, please contact Dr. Daniel Daves at [daniel@aidshivawareness.org](mailto:daniel@aidshivawareness.org) or 314-397-2580. WEB SITE: [www.aidshivawareness.org](http://www.aidshivawareness.org)



## Supplemental Information on Flaxseed Lignans

### (Secoisolariciresinol diglucoside - SDG)

Flaxseed lignans have been studied with much enthusiasm for having many potential health benefits. Among them, and one of the most widely studied, include its anti-tumor effects.

Flaxseed is the richest plant source of lignan precursors (otherwise known as Secoisolariciresinol diglucoside or SDG) and the Natural Excellence line of lignan products contains the highest level of certified organic lignans available in any health product.

Below is a collection of research abstracts that pertain to lignans and cancer research. A subset of the abstracts also provides information related to lignans and its effects on diabetes and coronary heart disease.

### ABSTRACTS

- 1. Since lignans have been suggested to have some cancer-protective effects, flaxseed, the most abundant source of lignan precursors, was tested for its effect on early markers of risk for mammary carcinogenesis. Supplementation of a high-fat diet with flaxseed flour (FF) or defatted flaxseed meal (FM) (5% or 10%) reduced the epithelial cell proliferation by 38.8-55.4% and nuclear aberrations by 58.8-65.9% in female rat mammary gland, with optimum effects seen with the 5% FF. These protective effects were accompanied by increases in urinary lignan excretion indicating that they may be related to the ability of flaxseed to provide lignan precursors. (Serraino M & Thompson L, Cancer Lett, 60:135, 1991)**
- 2. Flaxseed ingestion produces potentially anticarcinogenic lignans in the colon. This study determined that flaxseed decreases the risk for colon carcinogenesis. In the descending colon of supplemented groups, the total number of aberrant crypts and foci were significantly reduced by 41-53% and 48-57%, respectively. Flaxseed may reduce the risk for colon carcinogenesis. (Serraino M & Thompson L, Cancer Lett, 63:159, 1992)**
- 3. Flaxseed lignans have antitumor, antimitotic, antioxidant and weak estrogenic activities, are potentially the richest source of phytoestrogens in the human diet and may be linked to a low incidence of breast and colon cancer. Secoisolariciresinol was discovered to be a very potent antioxidant similar to BHA. No toxicity was found in the lignans. (Obermeyer W, et al (US Food and Drug Administration, Center for Food Safety and Applied Nutrition, Div. Contaminants Chem., Natural Products Branch), Meeting Of The Federation Of American Societies For Experimental Biology On Experimental Biology March/April, 1993, FASEB J (Fed Am Soc Exp Biol), A863, 1993)**
- 4. Flaxseed SDG may have a therapeutic role in lupus nephritis. (Clark W, et al Lupus, 9(6): 429, 2000)**
- 5. Dietary estrogens, such as lignan-rich flaxseed, are similar in structure to endogenous sex steroid hormones and act in vivo to alter hormone metabolism and reduce subsequent cancer risk in postmenopausal women. (Hutchins A, Cancer Epidemiol Biomarkers Prev, 9(10): 1113, 2000)**
- 6. Asian men have much lower incidences of prostate cancer and possibly of benign prostatic hyperplasia (BPH) than their Western counterparts. Vegetarian men also have a lower incidence of prostate cancer than omnivorous males. Plant lignans give rise to the mammalian lignans, enterodiol and enterolactone; the richest source is linseed (flaxseed). In addition to their oestrogenic activity, these plant compounds can interfere with steroid metabolism and bioavailability,**

and also inhibit enzymes, such as tyrosine kinase and topoisomerase, which are crucial to cellular proliferation and hence **may contribute to lower incidences of prostate cancer.** (Eur Urol, 35(5-6): 377, 1999)

**7. Flaxseed ingestion produces large amounts of mammalian lignans with weak estrogenic/anti-estrogenic properties reduced adult relative prostate weight and cell proliferation, suggesting potential protection against prostatic disease, without affecting sex hormone levels.** (Tou J, et al, J Toxicol Environ Health, 56(8): 555, 1999)

**8. SDG is a plant lignan isolated from flaxseed. Lignans are platelet-activating factor-receptor antagonists that inhibit the production of oxygen radicals by polymorphonuclear leukocytes. SDG is an antioxidant. Antioxidants studied thus far are known to reduce hypercholesterolemic atherosclerosis. Research suggests that SDG reduces hypercholesterolemic atherosclerosis and that this effect is associated with a decrease in serum cholesterol, LDL-C, and lipid peroxidation product and an increase in HDL-C and antioxidant reserve.** (Prasad K, Circulation, 99(10): 1355, 1999)

**9. Phytoestrogens are diphenolic compounds that are present in several plants eaten by human beings. Flaxseed is a particularly abundant source of phytoestrogens.** When ingested in relatively large amounts, phytoestrogens have been shown to have significant estrogen agonists/antagonists effects in animals and humans. **There is epidemiological, laboratory and clinical evidence which indicates that phytoestrogens, like certain selective estrogen receptor modulators, have an antiproliferative effect on the breast, and positive effects on the lipoprotein profile and bone density.** They might also improve some of the climacteric symptoms. (Brzezinski A & Debi A, Eur J Obstet Gynecol Reprod Biol, 85(1): 47, 1999)

**10. The antioxidant activities of the flaxseed lignan secoisolariciresinol diglycoside (SDG) and its mammalian lignan metabolites, enterodiol (ED) and enterolactone (EL), were evaluated in both lipid and aqueous in vitro model systems. All three lignans significantly ( $p < \text{or} = 0.05$ ) inhibited the linoleic acid peroxidation at both 10 and 100 microM over a 24-48 h of incubation at 40 degrees C. The efficacy of SDG and particularly the mammalian lignans ED and EL to act as antioxidants in lipid and aqueous in vitro model systems, at relatively low concentrations (i.e. 100 microM), potentially achievable in vivo, is an evidence of a potential anticarcinogenic mechanism of flaxseed lignan SDG and its mammalian metabolites ED and EL.** (Kitts D, et al, Mol Cell Biochem, 202(1-2): 91, 1999)

**11. Flaxseed, the richest known source of plant lignans, has been shown to have chemo-protective effects** in animal and cell studies. Some of its effects may be mediated through its influence on endogenous hormone production and metabolism. Flaxseed supplementation significantly increased urinary 2-OHEstrogen excretion ( $p < 0.0005$ ) and the urinary 2/16 alpha-OHE1 ratio ( $p < 0.05$ ) in a linear, dose-response fashion. These results suggest that **flaxseed may have chemo-protective effects in postmenopausal women.** (Haggans C, et al, Nutr Cancer, 33(2): 188, 1999)

**12. Flaxseed is high in secoisolariciresinol diglycoside (SDG), the precursor of mammalian lignans, which can affect mammary gland structures. Lifetime or gestation and lactation exposure to 5 or 10% flaxseed induce structural changes in the mammary gland that may potentially reduce mammary cancer risk.** (Tou J & Thompson L, Carcinogenesis, 20(9): 1831, 1999)

**13. Flaxseed and SDG, regardless of dose, appeared to delay the progression of MNU-induced mammary tumorigenesis.** (Rickard S, et al, Nutr Cancer; 35(1): 50, 1999)

**14. Dietary supplementation with flaxseed or its lignan SDG has reduced induced mammary tumor size and number in rats.** There was a dose-dependent effect of SDG on tumor multiplicity, lowest in the HSDG group (high SDG 5%) and highest in the LSDG (low SDG 2.5%) group throughout treatment, indicating that HSDG inhibited, whereas LSDG promoted, MNU-induced mammary tumor development. **Tumor invasiveness and grade were decreased in all treatment groups compared with the BD (basal diet). Flaxseed and SDG treatment, regardless of dose, appeared to delay the progression of MNU-induced mammary tumorigenesis.** (Rickard S, et al, Nutr Cancer; 35(1): 50, 1999)

**15. Because flaxseed and its lignans are colon cancer protective,** it is concluded that, in contrast to other studies, beta-glucuronidase activity may play a beneficial role in their presence by increasing mammalian lignan absorption and enterohepatic circulation. (Jenab M, et al, Nutr Cancer, 33(2): 154, 1999)

**16. Flax seed is the richest source of omega-3 fatty acid and lignans. Omega-3 Fatty acid suppresses the production of interleukin-1 (IL-1), tumor necrosis factor (TNF) and leukotriene B4 (LTB4), and of OFRs by polymorphonuclear leukocytes (PMNLs) and monocytes. Lignans possess anti-platelet activating factor (PAF) activity and are antioxidant. PAF, IL-1, TNF and LTB4 are known to stimulate PMNLs to produce OFRs. Flaxseed would, therefore, reduce the levels of OFRs and hence would prevent the development of hypercholesterolemic atherosclerosis. In rabbits, flax seed reduced the development of aortic atherosclerosis by 46% and reduced the PMNL-CL without significantly lowering the serum cholesterol. Flax seed in normocholesterolemic rabbits increased serum total cholesterol and decreased PMNL-CL without significantly affecting the serum TG. Modest dietary flax seed supplementation is effective in reducing hypercholesterolemic atherosclerosis markedly without lowering serum cholesterol. Its effectiveness against hypercholesterolemic atherosclerosis could be due to suppression of enhanced production of OFRs by PMNLs in hypercholesterolemia. Dietary flax seed supplementation could, therefore, prevent hypercholesterolemia-related heart attack and strokes.** (Ogborn M, et al, Kidney Int 55(2): 417, 1999)

**17. Dietary supplementation with secoisolariciresinol diglycoside (SDG), a lignan precursor isolated from flaxseed, significantly reduced pulmonary metastasis of melanoma cells and inhibited the growth of metastatic tumors that formed in the lungs.** (Li D, et al, Cancer Lett, 142(1): 91, 1999)

**18. Flaxseed, the richest source of lignans reduces metastasis and inhibits the growth of the metastatic secondary tumors in animals. Flaxseed may be a useful nutritional adjuvant to prevent melanoma metastasis in cancer patients.** (Yan L, et al, Cancer Lett, 124(2): 181, 1998)

**19. Flaxseed contains lignans that have antioxidant activities and inhibit platelet-activating factor (PAF). Pretreatment with flaxseed attenuated endotoxin induced cardiac dysfunction and cellular damage. Flaxseed antioxidant and anti-PAF agents may be effective in the treatment of ET shock.** (Pattanaik U & Prasad K, J Cardiovasc Pharmacol Ther, 3(4): 305, 1998)

**20. The mammalian lignans enterolactone (EL) and enterodiol (ED) derived from precursors in foods, particularly flaxseed, have been shown to reduce the mammary tumor growth due to their antiestrogenic properties.** Lignans are growth inhibitors of colon tumor cells and they may act through mechanism(s) other than antiestrogenic activity. (Sung M, et al, Anticancer Res 18(3A): 1405, 1998)

**21. Flax seed is the richest source of omega-3 fatty acid and lignans. Omega-3 fatty acid suppresses the production of interleukin-1 (IL-1), tumor necrosis factor (TNF) and leukotriene B4 (LTB4), and of OFRs by polymorphonuclear leukocytes (PMNLs) and monocytes. Lignans possess anti-platelet activating factor (PAF) activity and are antioxidant. PAF, IL-1, TNF and LTB4 are known to stimulate PMNLs to produce OFRs. Flaxseed would, therefore, reduce the levels of OFRs and hence would prevent the development of hypercholesterolemic atherosclerosis. Flax seed reduced the development of aortic atherosclerosis by 46% and reduced the PMNL-CL without significantly lowering the serum cholesterol. Modest dietary flax seed supplementation is effective in reducing hypercholesterolemic atherosclerosis markedly without lowering serum cholesterol. Dietary flax seed supplementation could, therefore, prevent hypercholesterolemia-related heart attack and strokes.** (Prasad K, Atherosclerosis, 132(1): 69, 1997)

**22. Flaxseed, the richest source of mammalian lignan precursors, such as secoisolariciresinol diglycoside (SD), has been shown over the short term to decrease some early markers of colon cancer risk. This study determined that flaxseed has a colon cancer protective effect, that it is due, in part, to SD and that the protective effect of flaxseed is associated with increased beta-glucuronidase activity.** (Jenab M & Thompson L, Carcinogenesis, 17:1343, 1996)

**23. Secoisolariciresinol diglycoside (SDG), an antioxidant in flaxseed, is metabolized in the body and these metabolites have antioxidant activity which are even more potent than SDG. The effectiveness of SDG in hypercholesterolemic atherosclerosis, diabetes, and endotoxic shock could be due to these metabolites.** (Prasad K, Int. J. Angiol, 9(4): 220, 2000)

**24. Secoisolariciresinol diglycoside (SD), a mammalian lignan precursor found in flaxseed and tested for effects on mammary tumorigenesis, resulted in a 37% reduction ( $p < 0.05$ ) in the number of tumors per tumor-bearing rat and a 46% reduction ( $p < 0.05$ ) in the number of tumors per number of rats in each group. This study showed, for the first time, that SD has an antitumor effect**

**when provided at the early promotion stage of tumorigenesis.** (Thompson L, et al, Nutr Cancer, 26:159, 1996)

**25. Flaxseed 18-3 (n-3) alpha-linoleic acid showed a marked immunomodulatory effect on the exhaustive exercise-related immunosuppression, as compared to the effects of other PUFA.** (Benquet C, et al, J Toxicol Environ Health, 43: 225, 1994)

**26.** Reactive oxygen species (ROS) have been implicated in the development of diabetes mellitus. SDG isolated from flaxseed is an antioxidant. An investigation was made of the effects of SDG on the development of diabetes in rat, to determine if SDG can prevent/reduce the development of diabetes and if this prevention/reduction is associated with reduction in oxidative stress. **RESULTS: SDG prevented the development of diabetes by 75%.** (Prasad K, et al, Mol Cell Biochem, 206(1-2): 141, 2000; Prasad K, Mol Cell Biochem, 209(1-2): 89, 2000)

**27. Flaxseed and its lignan secoisolariciresinol diglycoside (SDG) inhibit mammary tumor development in rats. Increased plasma insulin-like growth factor I (IGF-I) concentrations are associated with increased breast cancer risk. The anticancer effect of flaxseed and SDG may be related, in part, to reductions in plasma IGF-I.** (Rickard S, et al, Cancer Lett, 8; 161(1): 47, 2000)

**28. Vitamin E-deficient diets containing 5 to 20% ground flaxseed protected mice against the malarial parasite Plasmodium voelii as shown by decreased parasitemia and enhanced survival.** (Levander O, et al, (USDA/ARS Human Nutrition Research Center, Vitamin Mineral Nutrition Laboratory), Nutrition Research, 11, 1991)

**29. Flaxseed, a rich source of mammalian lignan precursor secoisolariciresinol-diglycoside (SD) and alpha-linolenic acid (ALA), has been shown to be protective at the early promotion stage of carcinogenesis.** In conclusion, the **SD lignans in flaxseed appears to be beneficial throughout the promotional phase of carcinogenesis whereas the oil component is more effective at the stage when tumors have already been established.** (Thompson L, et al, Carcinogenesis, 17:1373, 1996)

**30. Clinical Trial with Prostate Cancer Patients.** Dietary fat and fiber affect hormonal levels and may influence cancer progression. **Flaxseed is a rich source of lignan and omega-3 fatty acids and may thwart prostate cancer. The potential effects of flaxseed may be enhanced with concomitant fat restriction.** We undertook a pilot study to explore whether a flaxseed-supplemented, fat-restricted diet could affect the biomarkers of prostatic neoplasia. **CONCLUSIONS: These pilot data suggest that a flaxseed-supplemented, fat-restricted diet may affect prostate cancer biology** and associated biomarkers. Further study is needed to determine the benefit of this dietary regimen as either a complementary or preventive therapy.

**31. The Phipps Study. Abstract.** Lignans are a group of phytochemicals shown to have weakly estrogenic and antiestrogenic properties. Two specific lignans, enterodiol and enterolactone, are absorbed after formation in the intestinal tract from plant precursors particularly abundant in fiber-rich food and are excreted in the urine. We evaluated the effect of the ingestion of **flax seed powder**, known to produce high concentrations of urinary lignans, on the menstrual cycle in 18 normally cycling women, using a balanced randomized cross-over design. Each subject consumed her usual omnivorous, low fiber (control) diet for 3 cycles and her usual diet supplemented with flax seed for another 3 cycles. The second and third flax cycles were compared to the second and third control cycles. Three anovulatory cycles occurred during the 36 control cycles, compared to none during the 36 flax seed cycles. Compared to the ovulatory control cycles, the ovulatory flax cycles were consistently associated with longer luteal phase (lp) lengths (mean +/- sem, 12.6 +/- 0.4 Vs. 11.4 +/- 0.4 Days; p = 0.002). There were no significant differences between flax and control cycles for concentrations of either estradiol or estrone during the early follicular phase, midfollicular phase, or lp.



Although flax seed ingestion had no significant effect on l<sub>p</sub> progesterone concentrations, the l<sub>p</sub> progesterone/estradiol ratios were significantly higher during the flax cycles. Midfollicular phase testosterone concentrations were slightly higher during flax cycles. Flax seed ingestion had no effect on early follicular phase concentrations of dhea-s, prl, or sex hormone-binding globulin. **Our data suggest a significant specific role for lignans in the relationship between diet and sex steroid action, and possibly between diet and the risk of breast and other hormonally dependent cancers.** (Phipps W, et al, J Clinl Endocrinol Metab, 77(5), 1993)

**MISCELLANY**

**Note: The Natural Excellence line of lignan products contains only the hulls of the flaxseed plant. This portion of the seed contains the highest concentration of SDG in the entire plant. Additionally, much of the fat has been removed to promote the shelf life of the product (approx. 1 year 3 months). The process and mechanisms used are proprietary.**

**Nutritional profile of whole flaxseeds**

**Two (2) tablespoons provide the following naturally occurring fatty acids, lignin fiber and lignan:**

- Alpha Linolenic Acid (**Omega-3**) .....**1,710 mg**
- Linoleic Acid (Omega-6) .....480 mg
- Oleic Acid (Omega-9) .....540 mg
- Lignin Fiber .....1,003 mg
- Lignan .....13.6 mg

Nutrients per 100 gr of flax: Thiamin - .03 mg; Riboflavin - .1 mg; Niacin - 5 mg; Pyridoxine - 10 mg; Pantothenic Acid - 7 mg; Calcium - 410 mg; Phosphate - 880 mg; Sodium - 32 mg; Potassium - 880 mg; Iron - 8.3 mg; Magnesium - 750 mg; Zinc - 12 mg; Copper - 1 mg; Manganese - 2.1 mg; Boron 3 mg; Chromium - 0.5 mg; Vitamin E - 0.6 I.U.; Vitamin A - 10 I.U. Protein: Alanine - 4.0 g; Arginine - 10.8 g; Aspartic Acid - 10.0 g; Cystine - 3.8 g; Glutamic - 20.2 g; Glycine - 6.0 g; Histidine - 2.9 g; Isoleucine - 4.6 g; Leucine - 6.2 g; Lysine - 3.9 g; Methionine - 2.3 g; Phenylalanine - 4.5 g; Proline - 4.5 g; Serine - 3.2 g; Threonine - 4.6 g; Tryptophan - 2.3 g; Tyrosine - 2.7 g; Valine - 5.2 g.

**FLAXSEED COMPOSITION**

***Linum usitatissimum***

<b>Nutrient</b>	<b>Units</b>	<b>1 cup</b> ----- <b>155.000 g</b>
<b>Proximates</b>		

Water	g	13.562
Energy	kcal	762.600
Energy	kJ	3191.450
Protein	g	30.225
Total lipid (fat)	g	52.700
Carbohydrate, by difference	g	53.087
Fiber, total dietary	g	43.245
Ash	g	5.425
<b>Minerals</b>		
Calcium, Ca	mg	308.450
Iron, Fe	mg	9.641
Magnesium, Mg	mg	561.100
Phosphorus, P	mg	771.900
Potassium, K	mg	1055.550
Sodium, Na	mg	52.700
Zinc, Zn	mg	6.463
Copper, Cu	mg	1.614
Manganese, Mn	mg	5.086
Selenium, Se	mcg	8.525
<b>Vitamins</b>		
Vitamin C, ascorbic acid	mg	2.015
Thiamin	mg	0.264
Riboflavin	mg	0.248
Niacin	mg	2.170
Pantothenic acid	mg	2.372
Vitamin B-6	mg	1.437
Folate	mcg	430.900
Vitamin B-12	mcg	0.000
Vitamin A, IU	IU	0.000
Vitamin A, RE	mcg_RE	0.000
Vitamin E	mg_ATE	7.750
<b>Lipids</b>		
Fatty acids, saturated	g	4.954
4:0	g	0.000
6:0	g	0.000
8:0	g	0.000
10:0	g	0.000
12:0	g	0.000
14:0	g	0.000

16:0	g	2.793
18:0	g	2.161
Fatty acids, monounsaturated	g	10.645
16:1	g	0.000
18:1	g	10.645
20:1	g	0.000
22:1	g	0.000
Fatty acids, polyunsaturated	g	34.782
18:2	g	6.693
18:3	g	28.089
18:4	g	0.000
20:4	g	0.000
20:5	g	0.000
22:5	g	0.000
22:6	g	0.000
Cholesterol	mg	0.000

USDA Nutrient Database for Standard Reference, Release 12 (March 1998)

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Prasad K. Reduction of serum cholesterol and hypercholesterolemic atherosclerosis in rabbits by secoisolariciresinol diglycoside isolated from flaxseed. *Circulation*. 99:1355-1362, 1999.

Prasad K, et al. Reduction of hypercholesterolemic atherosclerosis by CDC-flaxseed with very low alpha-linolenic acid. *Atherosclerosis*. 136: 367-375, 1998.

## ABSTRACTS and SUMMARIES

1. Since lignans have been suggested to have some cancer-protective effects, flaxseed, the most abundant source of lignan precursors, was tested for its effect on early markers of risk for mammary carcinogenesis. Supplementation of a high-fat diet with flaxseed flour (FF) or defatted flaxseed meal

(FM) (5% or 10%) reduced the epithelial cell proliferation by 38.8-55.4% and nuclear aberrations by 58.8-65.9% in female rat mammary gland, with optimum effects seen with the 5% FF. These protective effects were accompanied by increases in urinary lignan excretion indicating that they may be related to the ability of flaxseed to provide lignan precursors. (Serraino M & Thompson L, Cancer Lett, 60:135, 1991)

2. Flaxseed ingestion produces potentially anticarcinogenic lignans in the colon. This study determined that flaxseed decreases the risk for colon carcinogenesis. In the descending colon of supplemented groups, the total number of aberrant crypts and foci were significantly reduced by 41-53% and 48-57%, respectively. Flaxseed may reduce the risk for colon carcinogenesis. (Serraino M & Thompson L, Cancer Lett, 63:159, 1992)

3. Flaxseed lignans have antitumor, antimutagenic, antioxidant and weak estrogenic activities, are potentially the richest source of phytoestrogens in the human diet and may be linked to a low incidence of breast and colon cancer. Secoisolariciresinol was discovered to be a very potent antioxidant similar to BHA. No toxicity was found in the lignans. (Obermeyer W, et al (US Food and Drug Administration, Center for Food Safety and Applied Nutrition, Div. Contaminants Chem., Natural Products Branch), Meeting Of The Federation Of American Societies For Experimental Biology On Experimental Biology March/April, 1993, FASEB J (Fed Am Soc Exp Biol), A863, 1993)

4. Flaxseed SDG may have a therapeutic role in lupus nephritis. (Clark W, et al Lupus, 9(6): 429, 2000)

5. Dietary estrogens, such as lignan-rich flaxseed, are similar in structure to endogenous sex steroid hormones and act in vivo to alter hormone metabolism and reduce subsequent cancer risk in postmenopausal women. (Hutchins A, Cancer Epidemiol Biomarkers Prev, 9(10): 1113, 2000)

6. Asian men have much lower incidences of prostate cancer and possibly of benign prostatic hyperplasia (BPH) than their Western counterparts. Vegetarian men also have a lower incidence of prostate cancer than omnivorous males. Plant lignans give rise to the mammalian lignans, enterodiol and enterolactone; the richest source is linseed (flaxseed). In addition to their oestrogenic activity, these plant compounds can interfere with steroid metabolism and bioavailability, and also inhibit enzymes, such as tyrosine kinase and topoisomerase, which are crucial to cellular proliferation and hence may contribute to lower incidences of prostate cancer. (Eur Urol, 35(5-6): 377, 1999)

7. Flaxseed ingestion produces large amounts of mammalian lignans with weak estrogenic/anti-estrogenic properties reduced adult relative prostate weight and cell proliferation, suggesting potential protection against prostatic disease, without affecting sex hormone levels. (Tou J, et al, J Toxicol Environ Health, 56(8): 555, 1999)

8. SDG is a plant lignan isolated from flaxseed. Lignans are platelet-activating factor-receptor antagonists that inhibit the production of oxygen radicals by polymorphonuclear leukocytes. SDG is an antioxidant. Antioxidants studied thus far are known to reduce hypercholesterolemic atherosclerosis. Research suggests that SDG reduces hypercholesterolemic atherosclerosis and that this effect is associated with a decrease in serum cholesterol, LDL-C, and lipid peroxidation product and an increase in HDL-C and antioxidant reserve. (Prasad K, Circulation, 99(10): 1355, 1999)

9. Phytoestrogens are diphenolic compounds that are present in several plants eaten by human beings. Flaxseed is a particularly abundant source of phytoestrogens. When ingested in relatively large amounts, phytoestrogens have been shown to have significant estrogen agonists/antagonists effects in animals and humans. There is epidemiological, laboratory and clinical evidence which indicates that phytoestrogens, like certain selective estrogen receptor modulators, have an

antiproliferative effect on the breast, and positive effects on the lipoprotein profile and bone density. They might also improve some of the climacteric symptoms. (Brzezinski A & Debi A, Eur J Obstet Gynecol Reprod Biol, 85(1): 47, 1999)

10. The antioxidant activities of the flaxseed lignan secoisolariciresinol diglycoside (SDG) and its mammalian lignan metabolites, enterodiol (ED) and enterolactone (EL), were evaluated in both lipid and aqueous in vitro model systems. All three lignans significantly ( $p < \text{or} = 0.05$ ) inhibited the linoleic acid peroxidation at both 10 and 100 microM over a 24-48 h of incubation at 40 degrees C. The efficacy of SDG and particularly the mammalian lignans ED and EL to act as antioxidants in lipid and aqueous in vitro model systems, at relatively low concentrations (i.e. 100 microM), potentially achievable in vivo, is an evidence of a potential anticarcinogenic mechanism of flaxseed lignan SDG and its mammalian metabolites ED and EL. (Kitts D, et al, Mol Cell Biochem, 202(1-2): 91, 1999)

11. Flaxseed, the richest known source of plant lignans, has been shown to have chemo-protective effects in animal and cell studies. Some of its effects may be mediated through its influence on endogenous hormone production and metabolism. Flaxseed supplementation significantly increased urinary 2-OHEstrogen excretion ( $p < 0.0005$ ) and the urinary 2/16 alpha-OHE1 ratio ( $p < 0.05$ ) in a linear, dose-response fashion. These results suggest that flaxseed may have chemo-protective effects in postmenopausal women. (Haggans C, et al, Nutr Cancer, 33(2): 188, 1999)

12. Flaxseed is high in secoisolariciresinol diglycoside (SDG), the precursor of mammalian lignans, which can affect mammary gland structures. Lifetime or gestation and lactation exposure to 5 or 10% flaxseed induce structural changes in the mammary gland that may potentially reduce mammary cancer risk. (Tou J & Thompson L, Carcinogenesis, 20(9): 1831, 1999)

13. Flaxseed and SDG, regardless of dose, appeared to delay the progression of MNU-induced mammary tumorigenesis. (Rickard S, et al, Nutr Cancer; 35(1): 50, 1999)

14. Dietary supplementation with flaxseed or its lignan SDG has reduced induced mammary tumor size and number in rats. There was a dose-dependent effect of SDG on tumor multiplicity, lowest in the HSDG group (high SDG 5%) and highest in the LSDG (low SDG 2.5%) group throughout treatment, indicating that HSDG inhibited, whereas LSDG promoted, MNU-induced mammary tumor development. Tumor invasiveness and grade were decreased in all treatment groups compared with the BD (basal diet). Flaxseed and SDG treatment, regardless of dose, appeared to delay the progression of MNU-induced mammary tumorigenesis. (Rickard S, et al, Nutr Cancer; 35(1): 50, 1999)

15. Because flaxseed and its lignans are colon cancer protective, it is concluded that, in contrast to other studies, beta-glucuronidase activity may play a beneficial role in their presence by increasing mammalian lignan absorption and enterohepatic circulation. (Jenab M, et al, Nutr Cancer, 33(2): 154, 1999)

16. Flax seed is the richest source of omega-3 fatty acid and lignans. Omega-3 Fatty acid suppresses the production of interleukin-1 (IL-1), tumor necrosis factor (TNF) and leukotriene B4 (LTB4), and of OFRs by polymorphonuclear leukocytes (PMNLs) and monocytes. Lignans possess anti-platelet activating factor (PAF) activity and are antioxidant. PAF, IL-1, TNF and LTB4 are known to stimulate PMNLs to produce OFRs. Flaxseed would, therefore, reduce the levels of OFRs and hence would prevent the development of hypercholesterolemic atherosclerosis. In rabbits, flax seed reduced the development of aortic atherosclerosis by 46% and reduced the PMNL-CL without significantly lowering the serum cholesterol. Flax seed in normocholesterolemic rabbits increased serum total cholesterol and decreased PMNL-CL without significantly affecting the serum TG. Modest dietary flax seed supplementation is effective in reducing hypercholesterolemic atherosclerosis markedly without

lowering serum cholesterol. Its effectiveness against hypercholesterolemic atherosclerosis could be due to suppression of enhanced production of OFRs by PMNLs in hypercholesterolemia. Dietary flax seed supplementation could, therefore, prevent hypercholesterolemia-related heart attack and strokes. (Ogborn M, et al, Kidney Int 55(2): 417, 1999)

17. Dietary supplementation with secoisolariciresinol diglycoside (SDG), a lignan precursor isolated from flaxseed, significantly reduced pulmonary metastasis of melanoma cells and inhibited the growth of metastatic tumors that formed in the lungs. (Li D, et al, Cancer Lett, 142(1): 91, 1999)

18. Flaxseed, the richest source of lignans reduces metastasis and inhibits the growth of the metastatic secondary tumors in animals. Flaxseed may be a useful nutritional adjuvant to prevent melanoma metastasis in cancer patients. (Yan L, et al, Cancer Lett, 124(2): 181, 1998)

19. Flaxseed contains lignans that have antioxidant activities and inhibit platelet-activating factor (PAF). Pretreatment with flaxseed attenuated endotoxin induced cardiac dysfunction and cellular damage. Flaxseed antioxidant and anti-PAF agents may be effective in the treatment of ET shock. (Pattanaik U & Prasad K, J Cardiovasc Pharmacol Ther, 3(4): 305, 1998)

20. The mammalian lignans enterolactone (EL) and enterodiol (ED) derived from precursors in foods, particularly flaxseed, have been shown to reduce the mammary tumor growth due to their antiestrogenic properties. Lignans are growth inhibitors of colon tumor cells and they may act through mechanism(s) other than antiestrogenic activity. (Sung M, et al, Anticancer Res 18(3A): 1405, 1998)

21. Flax seed is the richest source of omega-3 fatty acid and lignans. Omega-3 fatty acid suppresses the production of interleukin-1 (IL-1), tumor necrosis factor (TNF) and leukotriene B4 (LTB4), and of OFRs by polymorphonuclear leukocytes (PMNLs) and monocytes. Lignans possess anti-platelet activating factor (PAF) activity and are antioxidant. PAF, IL-1, TNF and LTB4 are known to stimulate PMNLs to produce OFRs. Flaxseed would, therefore, reduce the levels of OFRs and hence would prevent the development of hypercholesterolemic atherosclerosis. Flax seed reduced the development of aortic atherosclerosis by 46% and reduced the PMNL-CL without significantly lowering the serum cholesterol. Modest dietary flax seed supplementation is effective in reducing hypercholesterolemic atherosclerosis markedly without lowering serum cholesterol. Dietary flax seed supplementation could, therefore, prevent hypercholesterolemia-related heart attack and strokes. (Prasad K, Atherosclerosis, 132(1): 69, 1997)

22. Flaxseed, the richest source of mammalian lignan precursors, such as secoisolariciresinol diglycoside (SD), has been shown over the short term to decrease some early markers of colon cancer risk. This study determined that flaxseed has a colon cancer protective effect, that it is due, in part, to SD and that the protective effect of flaxseed is associated with increased beta-glucuronidase activity. (Jenab M & Thompson L, Carcinogenesis, 17:1343, 1996)

23. Secoisolariciresinol diglycoside (SDG), an antioxidant in flaxseed, is metabolized in the body and these metabolites have antioxidant activity which are even more potent than SDG. The effectiveness of SDG in hypercholesterolemic atherosclerosis, diabetes, and endotoxic shock could be due to these metabolites. (Prasad K, Int. J. Angiol, 9(4): 220, 2000)

24. Secoisolariciresinol diglycoside (SD), a mammalian lignan precursor found in flaxseed and tested for effects on mammary tumorigenesis, resulted in a 37% reduction ( $p < 0.05$ ) in the number of tumors per tumor-bearing rat and a 46% reduction ( $p < 0.05$ ) in the number of tumors per number of rats in each group. This study showed, for the first time, that SD has an antitumor effect when provided at the early promotion stage of tumorigenesis. (Thompson L, et al, Nutr Cancer, 26:159, 1996)

25. Flaxseed 18-3 (n-3) alpha-linolenic acid showed a marked immunomodulatory effect on the exhaustive exercise-related immunosuppression, as compared to the effects of other PUFA. (Benquet C, et al, J Toxicol Environ Health, 43: 225, 1994)

26. Reactive oxygen species (ROS) have been implicated in the development of diabetes mellitus. SDG isolated from flaxseed is an antioxidant. An investigation was made of the effects of SDG on the development of diabetes in rat, to determine if SDG can prevent/reduce the development of diabetes and if this prevention/reduction is associated with reduction in oxidative stress. RESULTS: SDG prevented the development of diabetes by 75%. (Prasad K, et al, Mol Cell Biochem, 206(1-2): 141, 2000; Prasad K, Mol Cell Biochem, 209(1-2): 89, 2000)

27. Flaxseed and its lignan secoisolariciresinol diglycoside (SDG) inhibit mammary tumor development in rats. Increased plasma insulin-like growth factor I (IGF-I) concentrations are associated with increased breast cancer risk. The anticancer effect of flaxseed and SDG may be related, in part, to reductions in plasma IGF-I. (Rickard S, et al, Cancer Lett, 8: 161(1): 47, 2000)

28. Vitamin E-deficient diets containing 5 to 20% ground flaxseed protected mice against the malarial parasite Plasmodium voelii as shown by decreased parasitemia and enhanced survival. (Levander O, et al, (USDA/ARS Human Nutrition Research Center, Vitamin Mineral Nutrition Laboratory), Nutrition Research, 11, 1991)

29. Flaxseed, a rich source of mammalian lignan precursor secoisolariciresinol-diglycoside (SD) and alpha-linolenic acid (ALA), has been shown to be protective at the early promotion stage of carcinogenesis. In conclusion, the SD lignans in flaxseed appears to be beneficial throughout the promotional phase of carcinogenesis whereas the oil component is more effective at the stage when tumors have already been established. (Thompson L, et al, Carcinogenesis, 17:1373, 1996)

30. Clinical Trial with Prostate Cancer Patients. Dietary fat and fiber affect hormonal levels and may influence cancer progression. Flaxseed is a rich source of lignan and omega-3 fatty acids and may thwart prostate cancer. The potential effects of flaxseed may be enhanced with concomitant fat restriction. We undertook a pilot study to explore whether a flaxseed-supplemented, fat-restricted diet could affect the biomarkers of prostatic neoplasia. CONCLUSIONS: These pilot data suggest that a flaxseed-supplemented, fat-restricted diet may affect prostate cancer biology and associated biomarkers. Further study is needed to determine the benefit of this dietary regimen as either a complementary or preventive therapy. (Denmark-Wahnefried W, et al. Urology. 58:47-52, 2001.)

31. The Phipps Study. Abstract. Lignans are a group of phytochemicals shown to have weakly estrogenic and antiestrogenic properties. Two specific lignans, enterodiol and enterolactone, are absorbed after formation in the intestinal tract from plant precursors particularly abundant in fiber-rich food and are excreted in the urine. We evaluated the effect of the ingestion of flax seed powder, known to produce high concentrations of urinary lignans, on the menstrual cycle in 18 normally cycling women, using a balanced randomized cross-over design. Each subject consumed her usual omnivorous, low fiber (control) diet for 3 cycles and her usual diet supplemented with flax seed for another 3 cycles. The second and third flax cycles were compared to the second and third control cycles. Three anovulatory cycles occurred during the 36 control cycles, compared to none during the 36 flax seed cycles. Compared to the ovulatory control cycles, the ovulatory flax cycles were consistently associated with longer luteal phase (lp) lengths (mean +/- sem, 12.6 +/- 0.4 Vs. 11.4 +/- 0.4 Days; p = 0.002). There were no significant differences between flax and control cycles for concentrations of either estradiol or estrone during the early follicular phase, midfollicular phase, or lp. Although flax seed ingestion had no significant effect on lp progesterone concentrations, the lp



progesterone/estradiol ratios were significantly higher during the flax cycles. Midfollicular phase testosterone concentrations were slightly higher during flax cycles. Flax seed ingestion had no effect on early follicular phase concentrations of dheas, prl, or sex hormone-binding globulin. Our data suggest a significant specific role for lignans in the relationship between diet and sex steroid action, and possibly between diet and the risk of breast and other hormonally dependent cancers. (Phipps W, et al, J Clinl Endocrinol Metab, 77(5), 1993)

# U.S. Report On Flax Lignan Study

## AIDS Research & Assistance Institute

This report is made on the anecdotal information obtained from the Flax Hull Lignan study conducted by AIDS Research & Assistance Institute. The study was originally started to test healthy individuals and others with health issues such as high blood pressure, diabetes, heart disease, hormone specific issues as breast lumps, perimenopausal and postmenopausal problems, prostate issues, high cholesterol and autoimmune diseases like arthritis and HIV/AIDS. The goal was to see if adding the lignan product to their daily diet would boost their immune systems to fight these various problems. The fact that people with HIV/AIDS and cancer have problems with nutrition and with vomiting and diarrhea, the goal was to control those problems to stabilize their nutritional needs and to help the body's own defenses to fight back. Since organizational funds were limited and lab studies on individuals not included, ARAI had to rely on the participants to share any lab work their primary physicians or specialists ordered for them. Some did share their information. All participants agreed that if we gave them the flax product free, they would furnish ARAI with a testimonial report. Some participants did not follow through with the full 90 day agreement, and therefore we did not include them in the official reporting.

The instructions for taking the flax began with 2 scoops per day. 15% of the participants experienced constipation with this amount of high fiber flax lignan. Therefore, the dosage was immediately dropped to 1 scoop per day for all participants; 2 weeks after the trial began. 25% experienced "flu-like" symptoms that lasted only a few days.

Of the cancer patients who responded to the study, 100% did report a decrease in size or a total disappearance of tumors. However, the one patient with non Hodgkins lymphoma also had times of increasing then decreasing in tumor size. One breast cancer patient experienced a total disappearance of tumors as long as she continued to take the flax. A few months after stopping the flax, tumors came back once again. She recently reported that after she resumed taking the flax, the tumors are once again shrinking.

Of the HIV/AIDS patients, 85% reported feeling a lot more energetic, increased appetites with almost total cessation of nausea, vomiting and diarrhea. Of those which we were able to measure with their blood tests, 71% had a drop in viral loads over the 90 day period. 28% of those with blood tests reported a decrease to total non-detectable viral load and increase in CD4 values. With one international patient (India) during phase 1 testing, we could not measure response, but only to say he felt better and several of his KS lesions disappeared. There was a 71% drop in viral loads of those we could measure.

There were four people who wanted to take the flax but did not want to join the study. Each reported significant drop in blood glucose levels. One lady on an insulin pump happily reported her doctor told her that she had normal glucose readings for the first time in five years. Her cholesterol dropped and lipids panels showed normal triglycerides, LDL's and HDL's. One lady is now off all oral hypoglycemic. Her diabetes is now controlled by diet and exercise. To say there was a 100% decrease in blood glucose needs to be understood that it required compliance with proper diet, exercise and pharmaceutical support. The same can be said for those with high cholesterol, hypertension, etc.

With these results and the reports ARAI is receiving from African studies, we see a definite correlation between using the flax lignans as a nutritional supplement and an increase in immune system response. Definite benefits for numerous other medical conditions are also noted.

***Personal Note From M.J. Whaley, RN:*** Thank you for allowing me the opportunity to run this study. I hope to see flax lignans being used in the near future in third world countries in an effort to help those afflicted with HIV/AIDS. I feel this would be an excellent adjunct therapy in the fight of these diseases.

# AIDS RESEARCH & ASSISTANCE INSTITUTE

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To Whom It May Concern

My name is Margaret Whaley and I am the RN that worked on the Flax Lignan Study for ARAI. Let me start by saying Dr. Daves had approached me several times to ask me if I would "check out" different products that claimed to have healing properties for HIV/AIDS and cancer. He wanted my professional opinion before starting a study of any product on AIDS/HIV patients. Regarding various products, I returned to him with the answer, *"I can not verify the claims of these products and I am unable to find any research they claim that has been done. Therefore, I would not be willing to ask anyone to try this product."* When he asked me to research the Flax Hull Lignans, I found the amount of research that has been done on flax to be extensive. It is well known that the lignans were the "super chargers" in the flax. I read about the effects on hypertension, high cholesterol, heart disease, diabetes, prostate problems and other hormone specific tumors as in breast cancer, endometrial, colon cancer, and menopausal issues. I was fascinated by what I read. I contacted Dr. Daves and said I would work on this project to check out the flax lignan product. The reason I am telling you this is that I am very particular about what and where my signature is associated. I won't do anything I feel is harmful to anyone. In the past, I had also gone through a life threatening illness and found myself being a "guinea pig" for various medical methods so to speak, and I refused to be a part of that with others.

The studies we performed were totally reliant on the participants and their willingness to provide 30, 60 and 90 day reports. The only problem I had with this study was having relying on others to share this information with me. Many would tell me of the different powerful changes in their lives, and some wouldn't write the report to make it official.

Of course, I was really excited by the written reports that did come in and all of the positive response that the participants were telling me. It made sense that this natural fiber worked so well on so many problems after reading all the research and what participants were telling me. Why wouldn't it work on HIV/AIDS, cancer and other diseases that destroyed the immune system? There were times I could do nothing but jump up and down and praise God when I received the reports. I truly believe in this product, I take the product, I have two siblings and a niece taking the product, and my in laws and many friends from church and in the community take the product.

One of the most remarkable things they see is, that when they stop taking the flax lignans, their cholesterol goes back up, prostate problems return with rising PSA's, blood glucose is not as easily controlled, or breast lumps return. In one participant, her malignant breast tumors went away when she was taking the flax and then they returned when she stopped taking the lignans. Her doctor compared it to Tamoxifen. She is once again taking the flax.

Karen R., with AIDS was the most remarkable participant. She was dying and on hospice care. Three weeks after starting the flax lignan product, she was cooking a chili dinner for ten people! Her viral load went from 360,000 to non-detectable shortly thereafter. She stopped taking the flax lignans faithfully after the study, and her viral loads re-appeared. She has had to return to maintenance

doses of her anti-virals, but laughs because her doctor is telling her to walk more as she is gaining too much weight. She did get married about a year after starting the flax lignan program.

I would gladly tell anyone my views on the flax lignans. I have seen it perform "miracles" in the U.S., and the reports from Africa verify what I have seen in this nation. The cost of the flax is so small compared to pharmaceuticals and it helps with so many disease processes. I feel it would help everyone - even healthy individuals could benefit from the flax. The only side effects I have noted were slight flu-like symptoms for the first few days when beginning the flax. I also noticed some constipation or diarrhea that remedied after making adjustments with fluid intake or increasing or lowering flax doses. I found that in severely ill people, one half (1/2) scoop every other day and then a gradual increase to one full scoop (one teaspoon) a day was just as effective as one or two scoops daily and caused less problems than asking them to just take 1 scoop per day from the start. This product also helps with nutritional stabilization by helping to stop the diarrhea and helps increase appetite for extremely ill people. When nutritional support is high quality, the patient naturally gets better. It all works together to improve the immune system.

Sincerely,

**Margarete Whaley, RN**

# UNITED STATES

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## ► Karen (U.S.A.) -- HIV - Full Blown AIDS Report April 2004

*NOTE: When we found Karen in March, 04', she was bed ridden in hospice care, dying of AIDS in her home after a long multiple year bout with HIV. The doctors told her that there was nothing more they could do for her. Within weeks of starting the flax hull lignan program, she was back up on her feet and actually helped unload a truckload of food to be given away on a church parking lot. Her story is absolutely amazing and has given great hope to many.*

Her reports in her words:

I am almost 100%! I am growing stronger everyday, physically and spiritually, and mentally. I take 1/2 scoop (1 teaspoon) of flax every day. I still have some diarrhea. I am more energetic. My stamina is increasing. I can walk, stand, lift and run again. Thank you Jesus.

Doctors are talking of taking me off some of the medications I take. WHOOPEE! I have been helping every month with Angel Food emergency box distribution. I work on the line filling food boxes . I also do coffee, hot chocolate and cookies for all who participate. It's a great time.

I have also done lunch for our youth on Saturdays (X2). I am doing volunteer work two days a week distributing bread to the community.

I am no longer in need of a personal caregiver. A nurse comes twice monthly instead of once a week. I am capable of keeping my own house again. I do my own cooking, cleaning, laundry and shopping again. I am seeing my doctors every three months now. I am beginning to drive again. Slow process Ha Ha. I am active in church and church functions. I am looking forward to spring and summer this year. Can hardly wait to get out!!



The Lord is restoring my life. He is restoring everything in my life. Even the scars on my flesh are diminishing. I am healing inside and out. What a GREAT GOD we have.

*NOTE: Karen's viral load dropped to non detectible within months of starting the flax hull lignan program. Since this trial, she has continued to gain weight and she got married a year ago with new hope and a new lease on life.*

**A few pages of Karen's blood results are listed below:**

**KAREN**  
 43 Year Old Female DOB: 01/29/1961 757-0003005 Home:  
 Insurance: MOMCD (102)

Enterprise/Infectious Disease/Yearly	Date	01/05/2004	11/03/2003	07/31/2003	06/05/2003	04/03/2003	02/13/2003	10/10/2002
CD4 # (x)		9	8	10	5	6	8	8
T-HELPER CD4 (X1000)		233 ✓	196	248	36	61	81	124
HIV I RNA		195 ✓	<400	2410	313000	244000	75197	347275
HIV GENOTYPE			UTO					
G-S-PD (U/g (ngb))								
CMV AB IGG (AU/mL)							(+) 4.40	
RPR							NR	
VDRL								
TOXO TITER							(-) 0.25	
ANTI-HAV							(+)	
ANTI-HBS			(+) 35 u				(+)	
HBSAG							(-)	
ANTI-HBC							(+)	
HEP C AB							(-)	
HCV-RNA QUAN (copies)								
EYE EQAM								
TB-PPD								
PREG TST URN								
DEPOPROVING								
PAP SMEAR			(-) mal					
COLPO BX								
COLPO W/ECC								
LEEP CONE								
LEEP W/ECC								
CANDID VAGIN								
BACTVAGINOS								
GC CULTURE			(-)				(-)	
CHLAMYD CULT			(-)				(-)	
TRICHO WET								
HSV GENITAL								
HPV GEN CULT								

Abnormal conditions are flagged with one of the following characters in the first column:

\* - Panic High    ) - High    \* - Abnormal    : - Very Abnormal    < - Low    | - Panic Low    \* - Other

Washington University School of Medicine

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04/05/04

Page 1

Flowsheet

**KAREN**

43 Year Old Female DOB: 01/29/1961

757-0003005

Home:   
 Insurance: MOMCD (102)

Enterprise/Infectious Disease/Home IV Labs	Date	01/05/2004	11/03/2003	07/31/2003	06/05/2003	04/03/2003	02/13/2003	10/10/2002
WBC (10 <sup>3</sup> /mm <sup>3</sup> )	7.0	6.0			3.0	3.5	4.6	4.2
RBC (10 <sup>6</sup> /mm <sup>3</sup> )	4.31	4.39			3.46	4.10	3.77	4.13
HGB (g/dL)	13.7	13.9			11.3	13.1	11.7	13.2
HCT (%)	42.5	43.4			32.4	38.5	34.7	39.2
PLATELETS (/mm <sup>3</sup> )	313	284			217	321	304	166
ANC (10 <sup>3</sup> /mm <sup>3</sup> )	4.3	3.2			1.9	2.1	3.3	2.1
EOS COUNT (/mm <sup>3</sup> )	1.24	1.64			0.0	0.1	0.0	0.0
PT PATIENT (s)								
INR								
BG RANDOM (mg/dL)	80	79	90		92	77	79	75
BUN (mg/dL)	12	12	14		13	15	16	10
CREATININE (mg/dL)	0.7	0.7	1.1		0.7	0.8	0.7	0.7
SODIUM (mmol/L)	137	137	137					137
POTASSIUM (mmol/L)	4.6	4.8	4.7		4.4	4.8	3.6	4.9
CHLORIDE (mmol/L)	106	107	104					104
CO2 TOTAL (mmol/L)	24	23	24					
CALCIUM (mg/dL)	8.8	9.1	9.8		8.9	8.8	8.4	9.3
ALBUMIN (g/dL)	4.0	4.1	4.2			4.6	3.9	
BILI TOTAL (mg/dL)	0.3	0.3	0.4		0.3	0.3	0.4	0.3
ALK PHOS (U/L)	140	124	73		68	78	70	63
SGOT (AST) (U/L)	18	16	15		13	14	16	18
SGPT (ALT) (U/L)	13	9	9		8	9	8	13
PO4 (mg/dL)								
MAGNESIUM (mg/dL)								
HGBA1C (%)								
AMYLASE (U/L)								
LIPASE (U/L)								
LACTATE (mmol/L)								
CRP (mg/dL)								
ESR (mm/hr)								
GENTA PEAK (ug/mL)								
GENTA TROUGH (ug/mL)								
VANCOMY CHAL (ug/mL)								
VANCOMY PEAK (ug/mL)								

Abnormal conditions are flagged with one of the following characters in the first column:

\* - Panic High > - High + - Abnormal : - Very Abnormal < - Low ! - Panic Low \* - Other



**KAREN** Home:  
 43 Year Old Female DOB: 01/29/1961 757-0003005 Insurance: MOMCD (102)

Enterprise/Infectious Disease/Lipid/Hepatic Function Panel							
	Date: 01/05/2004	11/03/2003	07/31/2003	06/05/2003	04/03/2003	02/13/2003	10/18/2002
TRIGLYC FAST (mg/dL)					296	222	
CHOLESTEROL (mg/dL)					190	109	
HDL (mg/dL)					38	17	
LDL (CALCUL) (mg/dL)					101	49	
ALBUMIN (g/dL)	4.0	4.1	4.2		4.6	3.9	
BILI TOTAL (mg/dL)	0.3	0.3	0.4	0.3	0.3	0.4	0.3
ALK PHOS (U/L)	140	124	73	68	76	70	63
SGOT (AST) (U/L)	18	16	15	13	14	16	16
SGPT (ALT) (U/L)	15	9	9	8	9	9	13
BILI DIRECT (mg/dL)							

Abnormal conditions are flagged with one of the following characters in the first column:

x - Panic High    > - High    \* - Abnormal    : - Very Abnormal    < - Low    ! - Panic Low    # - Other

Observational Prospective Study Data Sheet  
Flax Hull Lignans

Name: Ben

Age:

City: Man., Texas

Country: United States

Date 11-23-02

Date 11-23-02

Pre-supplementation

Post-supplementation

Height	Height
Weight	Weight
BMI	BMI
Prealbumin	Prealbumin
Albumin	Albumin
HIV Viral Load	HIV Viral load
CD4 count	CD4 count
Psychological Test	Psychological test

Cancer in the neck. Completed chemo and radiation with a neck dissection in October 2002. Taking multivit; mgm3, CranActin OTC; Hydrocodenel/APAP5 - 2 every 6 hours as needed for pain. Diflucan 200 mg OD, Metronidazole 250mg twice a day. Given 3 months to live.

Variables

Pre-supplementation

Post-supplementation

Total caloric intake	Total caloric intake
Socioeconomic status	Socioeconomic status
Medical Therapy	Medical Therapy

1/03 continuing to heal from surgery. Was given 3 months to live at time flax started. Salivary glands not working due to radiation. On Amoxicillin during dental work. 2/1 Continues to improve no tumors found. Clean bill of health given by 2/23/03. Patient lived 4 years longer, and eventually died of squamous cell lung cancer in December 2005.

Submitted by: M. Whaley, RN

Observational Prospective Study Data Sheet  
Flax Hull Lignans

Name: Tom

Age: 63

City: Vib., Missouri

Country: United States

Date Oct. 2002

Date Jan 2003

Pre-supplementation

Post-supplementation

Height	Height
Weight	Weight
BMI	BMI
Prealbumin	Prealbumin
Albumin	Albumin
HIV Viral Load	HIV Viral load
CD4 count	CD4 count
Psychological Test	Psychological test

Variables

Pre-supplementation

Post-supplementation

Total caloric intake	Total caloric intake
Socioeconomic status	Socioeconomic status
Medical Therapy: Topral 100, Ranitidine 2 times a day, Methotrexate 2 times a week, Isosorbide 1 day, Hydroxychloroquine 2 times a day Aspirin 1 a day.	Medical Therapy
<p>Patient had suffered a heart attack and had triple bi-pass surgery. 1/03 Participated reports a marked decrease in pain. Recovery time from daily work on a ladder and painting has gone from 2 to 3 days to overnight. Reports a drop in cholesterol by 30 points and has required a decrease in blood pressure medication. All coronary arteries remain free of any blockage.</p> <p>Sumbitted by: M. Whaley, RN</p>	

Observational Prospective Study Data Sheet  
Flax Hull Lignans

Name: Angelo  
Age: 33  
City: Toronto

Country: Canada

Date Oct. 2002

Date Jan. 2003

Pre-supplementation

Post-supplementation

Height	Height 6'1"
Weight	Weight 205
BMI	BMI
Prealbumin	Prealbumin
Albumin	Albumin
HIV Viral Load 10/4 went from 82,197 to 3529 in 3 months	HIV Viral load 1/14/03 3529
CD4 count 10/4 from 450 to 600 in 3 months	CD4 count 1/4/03 460 with 25% t8 cells
Psychological Test	Psychological test

Variables

Pre-supplementation

Post-supplementation

Total caloric intake	Total caloric intake
Socioeconomic status	Socioeconomic status
Medical Therapy Not taking meds at this point.	Medical Therapy
<p>HIV Positive Patient: 11/04/02 30 days – had been sleeping 15 hrs/day and still tired, now average of 8 hours and feels great. Lymph nodes in the back of his head, axilla and groin were swollen and very sore, but that has gone away. 1/3/03 – Still feels good. No swelling in lymph nodes. Has gained 15 pounds in 6 weeks. Now 205 lbs @ 6'1". Patient contacted me in Nov. 03 – had been in hospital and partial paralysis from west Nile virus from June until Oct. He said the doctor told him if he hadn't built up his immune system with the flax, he probably would have died. Have not heard from him since. Submitted by: M. Whaley, RN</p>	

Observational Prospective Study Data Sheet  
Flax Hull Lignans

Name: Alan

City: Fayetteville, Georgia

Country: United States

Date Nov. 2002

Date Jan. 2003

Pre-supplementation

Post-supplementation

Height	Height
Weight	Weight
BMI	BMI
Prealbumin	Prealbumin
Albumin	Albumin
HIV Viral Load 135.000	HIV Viral load Undetectable
CD4 count 220 T-cell	CD4 count 470
Psychological Test	Psychological test

Variables

Pre-supplementation

Post-supplementation

Total caloric intake	Total caloric intake
Socioeconomic status	Socioeconomic status
Medical Therapy None	Medical Therapy Flax
<p>30 Days – More energy and better appetite. Able to rake leaves using less Ativan.          60 Days – VL nondetectable, T-cells up 470; highest to date.          90 Days – Continues with non-detectable VL. Feeling good. Status - will continue taking flax.          Submitted by: M. Whaley, RN</p>	

Observational Prospective Study Data Sheet  
Flax Hull Lignans

Name: Rachel

City: Jerusalem Country: Israel

HIV – thinks infected in 1993 but tests always negative.

Found out 01/2001 that she was HIV positive.

Date Nov. 2002

Date

Pre-supplementation

Post-supplementation

Height	Height
Weight	Weight
BMI	BMI
Prealbumin	Prealbumin
Albumin	Albumin
HIV Viral Load: 2/01 560; 5/01 638; 6/01 532; 4/02 300; 2/03 300	HIV Viral load: 10/03 2350; 6/04 7300
CD4 count: 2/01 483; 5/01 425; 6/01 341; 4/02 709; 2/8/03 410	CD4 count: 10/09 - 452 and 6/04 - 351
Psychological Test	Psychological test

Variables

Pre-supplementation

Post-supplementation

Total caloric intake	Total caloric intake
Socioeconomic status	Socioeconomic status
Medical Therapy Only vitamins	Medical Therapy
I heard from patient sporadically. Even thorough her VL numbers went up a little, she still 'feels' better. The numbers upset her at first, but then she thought about how she was feeling. No correspondence for 2 years now. Submitted by: M. Whaley, RN	

Observational Prospective Study Data Sheet  
Flax Hull Lignans

Name: Melinda

Age:

City: Charlottesville, Virginia

Country: United States

Invasive ductal carcinoma – right breast. Lumpectomy 11/02. 2<sup>nd</sup> lump in same breast 2/03. Lumpectomy 3/03  
Nodes removed believed to be cancer free, but closer exam revealed tumors. Has not done resection of nodes  
nor chemo or radiation.

Date 8/02	Date 4/15/03
Pre-supplementation	Post-supplementation
Height	Height
Weight	Weight
BMI	BMI
Prealbumin	Prealbumin
Albumin	Albumin
HIV Viral Load	HIV Viral load
CD4 count	CD4 count
Psychological Test	Psychological test

7/06 Continued to be cancer free and stopped taking flax. A year after the program ended, her tumors re-appeared. Started back on flax and tumors are once again gone.

Variables

Pre-supplementation	Post-supplementation
Total caloric intake	Total caloric intake
Socioeconomic status	Socioeconomic status
Medical Therapy: not accepting conventional treatment. Taking blue green algae, probiotics rm-10(?) graviola (a plant from the Amazon thought to work like chemo) C O 10, vitamin E and C; Hoxey-wheat germ.	Medical Therapy
4/03 – Possible tumor in lining of the lung. Started flax along with many Cherokee cancer cure supplements.	
6/03 and 10/03 – CT scan – no significant changes in lung, but 2 spots – one on each breast. Left breast was calcification, Right breast 7mm mass in the bottom of first lumpectomy site was inflamed tissue no cancer.	

Observational Prospective Study Data Sheet  
Flax Hull Lignans

Name: Bob

Age:

City: New Delhi

Country: India

Date 7/6/2003

Date

Pre-supplementation	Post-supplementation
Height	Height
Weight	Weight
BMI	BMI
Prealbumin	Prealbumin
Albumin	Albumin
HIV Viral Load	HIV Viral load
CD4 count	CD4 count
Psychological Test	Psychological test

HIV positive with AIDS Symptoms - Patient could not submit lab tests as he couldn't afford to pay for them. Has four areas of KS – Started correspondence in March 03', but it took until July 03' to get him started on the flax.

Variables

Pre-supplementation	Post-supplementation
Total caloric intake	Total caloric intake
Socioeconomic status	Socioeconomic status
Medical Therapy Taking "Cats Clan Bark Powder" as a dietary supplement.	Medical Therapy
7/22/03 – Less stomach distressed with better bowel movements. More energy. 8/11/03 – Feels better, appetite better, sleeping better. KS lesion on hand is reducing and upper lesion falling off. Constipation is better. 10/22/03 – One KS lesion gone. Feeling much better. 7/06 – Bob continues to order flax and reports he is doing well. Was never able to get lab values. Submitted by: M.Whaley, RN	



Observational Prospective Study Data Sheet  
Flax Hull Lignans

Name: Louis

Child's age:

City: Sky Valley, California

Country: United States

HIV+ since 1986

Date 9/21/03

Date 2/25/04

Pre-supplementation

Post-supplementation

Height	Height
Weight	Weight
BMI	BMI
Prealbumin	Prealbumin
Albumin	Albumin
HIV Viral Load Over 300,000	HIV Viral load 342,000
CD4 count 190	CD4 count 78
Psychological Test	Psychological test

Started the original 'protease cocktail' after 4 months stopped. Status was almost dead.

10/3 – 30 days – Glands less swollen. Increased energy.

11/03 – He increased flax to 2 scoops without telling us, but got sick and went back to 1 scoop daily.

2/25/04 – Dr. advised to start another cocktail but patient declined.

Variables

Pre-supplementation

Post-supplementation

Total caloric intake	Total caloric intake
Socioeconomic status	Socioeconomic status
Medical Therapy Zoloft 250mg/day, Zovirax 400-800 mg/day, Diflucan 50 mg/day, Xanax, Percocet, Prilosec, Celebrex prn	
4/04 – Patient very ill – in hospital will go to hospice when released. 6/04 – Patient expired. Submitted by: M. Whaley, RN	

Observational Prospective Study Data Sheet  
Flax Hull Lignans

Name: John

Age:

City: KwaZulu Natal

Country: South Africa

Non Hodgkins Lymphoma Stage IV

Date 2/14/04

Date 6/7/04

Pre-supplementation

Post-supplementation

Height	Height
Weight	Weight
BMI	BMI
Prealbumin	Prealbumin
Albumin	Albumin
HIV Viral Load	HIV Viral load
CD4 count	CD4 count
Psychological Test	Psychological test

Variables

Pre-supplementation

Post-supplementation

Total caloric intake	Total caloric intake
Socioeconomic status	Socioeconomic status
Medical Therapy Taking local home remedies like African Potato (Hypoxis), Chelated Zinc. Had chemo in the past.	Medical Therapy Flax
<p>4/5/04 – 30 day report – First 2 weeks showed reduction in lymph glands, then swollen again and high fever the next 2 weeks. Slight improvement in chest. 5/5/04 – Massive increase in lymph gland below/in front of ear. 5.5cm in 48 hrs. Gland now down to 1.5cm which is small than before flax started. 6/7/04 – One swollen lymph gland has ‘disappeared’, left side of body. He will continue the flax as he feels it helped. Ordered enough flax to give a 3 month supply to 5 AIDS patients. Submitted by: M. Whaley, RN</p>	

Observational Prospective Study Data Sheet  
Flax Hull Lignans

Name: Bill

Child's age:

City: Danbury, Texas

Country: United States

Date 2/3/04

Date 5/12/04

Pre-supplementation	Post-supplementation
Height	Height
Weight	Weight
BMI	BMI
Prealbumin	Prealbumin
Albumin	Albumin
HIV Viral Load 55,000	HIV Viral load 35,330
CD4 count T-cell 104	CD4 count 108
Psychological Test	Psychological test

Variables

Pre-supplementation	Post-supplementation
Total caloric intake	Total caloric intake
Socioeconomic status	Socioeconomic status
Medical Therapy Verapamil 180mg/OD Invirase 200mg 8 tabs/00, Epivir 300 mg/OD, Reyataz 150mg/2 tabs OD, Norvir 100 mg/1 tab00, Videx 400 mg/1 tab OD; Celebrex 200mg/twice daily; Prednisone 5 mg/ 1 tab OD, Valtrex 500 mg OD only as needed usually once every 4-6 mos.	Medical Therapy
3/12/04 – Has had a rash for sometime now – prior to starting flax. Now rash gone completely. Experiencing increased energy and RA pain has decreased dramatically. Submitted by: M. Whaley, RN	

Observational Prospective Study Data Sheet  
Flax Hull Lignans

Name: Karen  
 Child's age: Adult 43  
 City: High Ridge, Missouri Country: United States  
 HIV/AIDS ARC

Date 9/03                      Date 12/03

Pre-supplementation

Post-supplementation

Height	Height
Weight - Less than 100 pounds	Weight - 115
BMI	BMI
Prealbumin	Prealbumin
Albumin 4.6(4/03); 4.2(7/03)	Albumin 4.1(11/03); 4.0(1/04)
HIV Viral Load 338,000	HIV Viral load 195 1/04; <400 Non-detectable as of 11/09/2003
CD4 count 36	CD4 count 1/05/04=233; 11/03/03 196
Psychological Test	Psychological test

6/2003 – Told that she has ‘full blown AIDS’ and she is dying. Very emaciated and sallow colored skin. Tinting noted on hands and forearm due to dehydration. Eats very little and fluid intake very low. Complained of vomiting and diarrhea. Is on hospice care – unable to perform ADL’s due to extreme weakness.

Variables

Pre-supplementation

Post-supplementation

Total caloric intake Eats and drinks very little	Total caloric intake
Socioeconomic status Medicaid	Socioeconomic status
Medical Therapy - Office visit every week. Kaletra softgels 3 pills twice/day; Wellbutrin 100mg daily, Viread 300mg daily, Ambien 10mg prn; Videx 250mg daily, Diflucan 100mg prn, SMT Batrim 1 daily.	Medical Therapy – Office visits every 3 mos. Able to do own ADL’s
10/04/03 – Increase in appetite, energy same. Increase in diarrhea. Stop flax due to severe diarrhea. 10/11 – Started flax again – no diarrhea. Decreased bacterium, Diflucam. 04/04 – Hospice status removed. Getting married!! Several months later Karen said her doctors have taken all anti-virals away. 2005 – It’s been about a year since removed from all meds. Viral load starting to increase. Re-start maintenance doses of lignan. - Submitted by: M. Whaley, RN	

# AFRICA

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**REPORT FROM EMMA FISHLOCK (RGN)**  
**TLHF SWAZILAND**

We have 17 children in total undertaking the Ligan Flax program which we started in November 2005, consisting of 3 girls and 14 boys. Three of them have HIV, and all three are on ARV's, and have been for a few years.

Three of the children started the program later than November and they came to the farm, nutritionally poor and under nourished.

I have found from the results that 35% of the children had a height and weight increase in the first 30days.

Within 90 days 94% of them had an increase in weight and 64% an increase in height.

In this period 52% of the children have had significant weight increase and 17% had a significant height increase.

52% of the children have displayed a noticeable change in temperament, and positive mood changes.

I do not have as yet comparative CD4 counts as the 6month schedule is August 12<sup>th</sup>. These can be made known at a later date.

Thank you  
Yours sincerely  
Emma Fishlock (RGN)

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name: M.D.

Address/Contact TLHF

City: Mababane Country: Swaziland, Southern Africa

Age: 16

Date Nov 05

Date Dec 05

Date Jan 06

Date Feb 06

### Pre-Supplementation    30 Day Supplementation    60 Day Supplementation    90 Day Supplementation

Height 130cm	Height 130cm	Height 131cm	Height 133 cm
Weight 26kgs	Weight 26kgs	Weight 28.5kgs	Weight 28kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load: 3,552
CD4 count	CD4 count	CD4 count	CD4 count: 569/ul
Psychological Test Very sad	Psychological Test Sad	Psychological Test Happy	Psychological Test Happy.

### Variables

#### Pre-supplementation    30 Day supplementation    60 Day Supplementation    90 Day Supplementation

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic On farm 2 months	Socioeconomic status Good on Hawane farm	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy On T.B medication. Has recent bronchitis Has small pleurisy On ARV's and vitamins	Medical Therapy On T.B medication	Medical Therapy Off T.B medication	Medical Therapy

Attending Physician/Counselor/Administrator: Emma Fishlock ( RGN)

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name M.D.

Address/Contact TLHF

City Mababane Country Swaziland, Southern Africa

Age 16

Date March 06

Date April 06

Date May 06

Date June06

**120 Day Supple**

**150 Day Supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Height 133cm	Height 135cm	Height 135cm	Height 136cm
Weight 28kgs	Weight 29kgs	Weight 30kgs	Weight 30kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Sad	Psychological Test Happy	Psychological Test Happy.	Psychological Test Sad

### Variables

**120 Daysuppl.**

**150 Day supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic S/A	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy T.B meds, Has Chest infection, oral antibiotics. Has ringworm	Medical Therapy Ringworm continues	Medical Therapy T.B now clear	Medical Therapy 4 day admission for pneumonia.,

Attending Physician/Counselor/Administrator: Emma Fishlock (RGN)



M.D came to us 3 months before the Flax Ligan feeding program began he was malnourished and had T.B. He had contracted HIV a few years before and psychologically was at an unsettled low point.

He was commenced on Flax in the November of 2005 within 3 months he showed a significant height and weight increase. Although he became susceptible to other chest problems, the doctors remarked that the severity of his chest problems they were astounded that he was still functioning as he was. Within a few months he had the all clear from T.B.

Despite his health problems his attitude and mood has been honorable and content. The amount of times I have seen M.D. has decreased over the time since the ligan flax seed has been introduced. He has had 1 serious hospital admission with pneumonia; the illness was so bad that the doctors felt he may have needed to be ventilated. However within 4 days of admission with just antibiotics and 48hrs of oxygen he was discharged from hospital. Despite the complex health problems I find he responds as quickly as someone who doesn't have HIV to treat.

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name M.Dl.

Address/Contact TLHF

City Mababane Country Swaziland, Southern Africa

Age 13

Date Nov 05

Date Dec 05

Date Jan 06

Date Feb 06

### Pre-Supplementation 30 Day Supplementation 60 Day Supplementation 90 Day Supplementation

Height 140cm	Height 140cm	Height 140cms	Height 140cm
Weight 31kgs	Weight 32kgs	Weight 32kgs	Weight 34kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load < 40cp/ml
CD4 count	CD4 count	CD4 count	CD4 count 1908/uL
Psychological Test Sad	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

#### Pre-supplementation 30 Day supplementation 60 Day Supplementation 90 Day Supplementation

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic In childrens home	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy On ARV's and vitamins long term	Medical Therapy S/A	Medical Therapy S/A	Medical Therapy S/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

Note: M. in July 2002 had a CD4 count of 306, in Jan 2003 CD4 count was 573 after ARV involvement, In Aug 2003 CD4 1054. There are no other results until the ones reported in 2006.

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name M.Dl.

Address/Contact TLHF

City Mababane Country Swaziland, Southern Africa

Age 16

Date March 06

Date April 06

Date May 06

Date June 06

**120 Day Supple**

**150 Day Supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Height 143cm	Height 145cm	Height 145cm	Height 146cm
Weight 33kgs	Weight 33.5kgs	Weight 35kgs	Weight 36kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

**120 Day supplemen.**

**150 Day supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomicstatus S/A	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy S/A	Medical Therapy S/A	Medical Therapy S/A	Medical Therapy S/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

M.D came to us as a very sick young man. He has HIV, when he arrived he had blood results which showed that he had a lack of oxygen cells in the blood; also he had some degree of liver and kidney failure. His CD4 count was 306 and was immediately put on ARV's and was treated for the condition with good effect. His CD4 count came up to 1054.

M.D started the Ligan Flax seed program in Nov 2005 within 3 months he showed amazing growth, he put on 5 kgs in 5 months and 9 cm in height in the same period. He was a boy who was disruptive in manner and someone who always sought attention. Since starting the Ligan Flax I have noticed and his mum has reported a change in mannerism, he is more content and relaxed in his environment and less disruptive.

I retested his CD4 count in February 2006 and the results were 1908, way above the normal range. The pathologists remarked that there was hardly any of the HIV virus in his system. I have in the 11 months I have been here never had to treat M.D for any condition.

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name S.T.

Address/Contact TLHF

City Mababane Country Swaziland, Southern Africa

Age 12

Date Nov 05

Date Dec 05

Date Jan 06

Date Feb 06

**Pre-Supplementation   30 Day Supplementation   60 Day Supplementation   90 Day Supplementation**

Height 146cm	Height 146.5cm	Height 148cm	Height 148cm
Weight 34kgs	Weight 37kgs	Weight 37kgs	Weight 38.5kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin

Psych - Sad

Sad

Happy

Happy

**Variables**

**Pre-supplementation   30 Day supplementation   60 Day Supplementation   90 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic In childrens home	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy On ARV's and Mulivits long term. Recent Chest infection	Medical Therapy Told Hiv status	Medical Therapy ARV's Multi Vitamins	Medical Therapy S/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name S.T.

Address/Contact TLHF

City Mababane Country Swaziland, Southern Africa

Age 12

Date March 06

Date April 06

Date May 06

Date June 06

**120 DaySupple**

**150 Day Supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Height 152cm	Height 153cm	Height 154.5cm	Height 157cm
Weight 39kgs	Weight 38kgs	Weight 44kgs	Weight 42kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy.	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

**120 Day suppl**

**150 Day supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy S/A	Medical Therapy S/A	Medical Therapy S/A	Medical Therapy Chest Infection,- Antibiotics

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

S.T was a young boy who came to us after being found living in a toilet block, he was malnourished and in poor health. He is HIV positive from abuse.

He is on ARV's and despite being here with us for a few years made very little progress development wise. Results from previous records show he grew 2cm in 6 months and only gained 4 kgs in weight. We commenced S.T on Ligan Flax seed in November 2005. Within a comparative 6 month period he gained 10kgs in weight, and 9 cm in height!

I have been here 11 months and only seen Siphon 3 times in that period for health complaints.

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name N.D.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 14

Date Nov 05

Date Dec 05

Date Jan 06

Date Feb 06

**Pre-Supplementation    30 Day Supplementation    60 Day Supplementation    90 Day Supplementation**

Height 153cm	Height 154cm	Height 155cm	Height 155cm
Weight 43kgs	Weight 44kgs	Weight 46.5kgs	Weight 46kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy.	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

**Pre-supplementation    30 Day supplementation    60 Day Supplementation    90 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic Childrens Home	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)



# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name N.D.

Address/Contact TLHF

City Mababane Country Swaziland, Southern Africa

Age 14

Date March 06

Date April 06

Date May 06

Date June 06

**120 Day Supple**

**150 Day Supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Height 157cm	Height 158cm	Height 159cm	Height 161 cm
Weight 48kgs	Weight 49kgs	Weight 50kgs	Weight 52kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy.	Psychological Test Happy.	Psychological Test Happy	Psychological Test Happy

### Variables

**120 Day supple**

**150 Day supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A

Medical Therapy  
N/A

Medical Therapy  
N/A

Medical Therapy  
N/A

Medical Therapy  
N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

N.D is a young man whose mother died of HIV; he himself is not HIV positive but came to us as his father was abusive and unable to care for him.

He commenced Ligan Flax seed in November 2005, in a previous 6 month period N.D grew 2 cm in height and 1 kg in weight. In a comparative 6 month period since commencing the Ligan flax seed he gained 8kgs and 8cm in height. The growth happened one month after taking the flax seed. I have never seen N.D for health problems in the 11 months I have been here.

N.D when I first came seemed very withdrawn and lacked confidence in many situations. I have found over the last 6 months his mannerisms has changed, he feels more relaxed in situations and has gained confidence.

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name N.M.

Address/Contact TLHF

City Mababane Country Swaziland, Southern Africa

Age 13

Date Nov 05

Date Dec 05

Date Jan 06

Date Feb 06

**Pre-Supplementation 30 Day Supplementation 60 Day Supplementation 90 Day Supplementation**

Height 133cm	Height 134cms	Height 134cms	Height 136cm
Weight 28kgs	Weight 29kgs	Weight 28kgs	Weight 29kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Unhappy	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

**Pre-supplementation 30 Day supplementation 60 Day Supplementation 90 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic Children's Home	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A

Medical Therapy  
Chest Infection,  
Cold sores, brain cyst

Medical Therapy  
Cough

Medical Therapy  
Sinusities, Pneumonia

Medical Therapy  
N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name N.M.

Address/Contact TLHF

City Mababane Country Swaziland, Southern Africa

Age 13

Date March 06

Date April 06

Date May 06

Date June 06

**120 Day Supple**

**150 Day Supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Height 136cm	Height 138cm	Height 138cm	Height 138cm
Weight 30kgs	Weight 29.5kgs	Weight 33kgs	Weight 32kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

**120 Day supple**

**150 Day supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic S/A	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A

Medical Therapy  
Cold

Medical Therapy  
N/A

Medical Therapy  
N/A

Medical Therapy  
N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

N.M came to us after both his parents died of HIV however he himself does not have HIV. He had a history of epilepsy which in the last few months has been discovered that he has a cyst on his brain. He had his last fit before the flax seed was commenced in early October. The doctor had previously commenced him on medication for it, but he had been off it a while. Since commencing the Flax seed he has had no more fits.

Within the first few months of starting the flax seed he did have problems with sinusitis and chest infections however it was found that he was not complying to taking it properly, and so did not really commence taking it until the January 2006. Since proper implementation he has had no other health problems and from originally seeing him 3 times a month I have not seen him in 4 months.

N.M is a very active child, weight gain has not been that progressive with the highest weight gain peak being 4 kgs, and has grown 5 cm since Nov 2005. However his weight gain did start a month after commencing the Ligan flax seed program.

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name S.D.

Address/Contact TLHF

City Mababane Country Swaziland, Southern Africa

Age 16

Date Dec 05

Date Jan 06

Date Feb 06

Date March 06

**Pre-Supplementation   30 Day Supplementation   60 Day Supplementation   90 Day Supplementation**

Height 155cm	Height 155cm	Height 155cm	Height 155cm
Weight 39kgs	Weight 41.5kgs	Weight 42.5kgs	Weight 43kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Sad	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

**Pre-supplementation   30 Day supplementation   60 Day Supplementation   90 Day Supplementation**

Total caloric intake 700	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic In Homestead	Socioeconomic status Childrens Home	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy N/A	Medical Therapy On multi vits- long term	Medical Therapy N/A	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name S.D.

Address/Contact TLHF

City Mababane Country Swaziland, Southern Africa

Age 16

Date April 06

Date May 06

Date June 06

Date July 06

**120 Day Supple**

**150 Day Supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Height 156cm	Height 156cms	Height 156cm	Height 156cm
Weight 42kgs	Weight 44kgs	Weight 44kgs	Weight 44kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy	Psychological Test Happy.	Psychological Test Happy	Psychological Test Happy

### Variables

**120 Day supple**

**150 Day supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic S/A	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy Cold	Medical Therapy Chest infection antibi	Medical Therapy N/A	Medical Therapy Cold

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

S.D was a boy who came to us in Nov 2005 from the community, his parents and family have died of AIDS although he does not have it himself he was physically abused and used terribly by neighboring families and homesteads, when he arrived at the farm he was malnourished.

S.D also has complications of curvature of the spine secondary to the abuse, which has stunted his growth.

We commenced him on the flax seed in Dec 05, within a couple of months he had but on 3 kgs of weight and grown 3 cm in height.

He came to us very unsettled and unsure of the surroundings, however now he is increased greatly in confidence. I have only seen him twice since he has been here for minor ailments.



# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name Z.D.

Address/Contact TLHF

City Mababane Country Swaziland, Southern Africa

Age 13

Date Nov 05

Date Dec 05

Date Jan 06

Date Feb 06

**Pre-Supplementation   30 Day Supplementation   60 Day Supplementation   90 Day Supplementation**

Height 153cm	Height 153cm	Height 153cm	Height 153cm
Weight 51kgs	Weight 51.5kgs	Weight 54kgs	Weight 53kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Sad	Psychological Test Sad	Psychological Test Happy	Psychological Test Happy

### Variables

**Pre-supplementation   30 Day supplementation   60 Day Supplementation   90 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic Childrens Home	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A

Medical Therapy  
Rash's, Cold

Medical Therapy  
Infected bite marks

Medical Therapy  
Infected Sores

Medical Therapy  
N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name Z.D.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 13

Date March 06

Date April 06

Date May 06

Date June 06

**120 Supplem**

**150 Day Supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Height 154cm	Height 154cm	Height 154cm	Height 154cm
Weight 54kgs	Weight 54kgs	Weight 56.5kgs	Weight 54kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

**120 Day supplem**

**150 Day supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic S/A	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy cold	Medical Therapy N/A	Medical Therapy N/A	Medical Therapy Chest Infection- antibiotics

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

Z. D came to us after her mother died of HIV and her father was unwilling to look after her. She is not HIV positive herself, but has been constantly plagued for many years with rashes and sores over her body. She when I first met her she was quite withdrawn and isolated.

She commenced the Ligan Flax feeding program in Nov 05, within a couple of months 60 says she had a 3 kg weight gain. She is one of the very few children which have reached their average height and weight goal for her age.

Since starting the Flax I have found that I have only seen her once for a rash which has resolved by itself and she has had no sores, however before commencing the flax I saw her 3 or 4 times for sores and rashes.

I have noticed her take a more active role within the house, and become more sociable with the other children. Her attitude which was quite unapproachable at times, especially when discipline was needed, I have noticed this has changed over the last 3 months.

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name S.S.

Address/Contact TLHF

City Mababane Country Swaziland, Southern Africa

Age 10

Date Nov 05

Date Dec 05

Date Jan 06

Date Feb 06

**Pre-Supplementation    30 Day Supplementation    60 Day Supplementation    90 Day Supplementation**

Height 138cm	Height 138cm	Height 139	Height 139cms
Weight 34kg	Weight 34kg	Weight 35kgs	Weight 34.5kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

**Pre-supplementation    30 Day supplementation    60 Day Supplementation    90 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 900	Total caloric intake 1800
Socioeconomic Children's Home	Socioeconomic status S/A	Socioeconomic status Homestead Visit	Socioeconomic status S/A

Medical Therapy  
N/A

Medical Therapy  
Multi Vits

Medical Therapy  
Fungal Rash

Medical Therapy  
N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name S.S.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 11

Date March 06

Date April 06

Date May 06

Date June 06

**120 Day Supplemen    150 Day Supplementation    180 Day Supplementation    210 Day Supplementation**

Height 139cm	Height141cm	Height 141cm	Height 141cm
Weight 34kgs	Weight 35kgs	Weight 36kgs	Weight 35kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy.	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

**120 Day supplem    150 Day supplementation    180 Day Supplementation    210 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic S/A	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

S.S came to us after both his parents died of Aids and his grandmother was unable to care for him. We commenced him on the Ligan Flax program in November 05, he meets his targets for average height and weight, which is rare within the farm program.

He is HIV negative, and apart from rash's he develops when he visits his homesteads he is a very healthy and fit boy. I have only seen him twice since I have been at the farm in 11 months.

I found since he has started the Flax seed he has become more confident, and settled. Emotionally he seemed very unstable and somewhat slow in his approach to life, however over the last five months he has become more confident in himself.

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name N.D.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 14

Date Nov 05

Date Dec 05

Date Jan 06

Date Feb 06

**Pre-Supplementation   30 Day Supplementation   60 Day Supplementation   90 Day Supplementation**

Height 165cm	Height 165cm	Height 165cm	Height 165cm
Weight 50kgs	Weight 50kgs	Weight 53kgs	Weight 53kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Angery, Sad	Psychological Test Sad	Psychological Test Happy	Psychological Test Happy

### Variables

**Pre-supplementation   30 Day supplementation   60 Day Supplementation   90 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic Children's Home	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name N.D.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 15

Date March 06

Date April 06

Date May 06

Date June 06

**120 Day Supple**

**150 Day Supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Height 164cm	Height 165cm	Height 165cm	Height 165cm
Weight 50kgs	Weight 49kgs	Weight 52kgs	Weight 50kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy	Psychological Test Sad	Psychological Test Happy	Psychological Test Happy

### Variables

**120 Day supplem**

**150 Day supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic Children's Home	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy Severe cold,	Medical Therapy Chest Infection	Medical Therapy N/A	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)



N.D came to the farm because her mother had died of Aids and her father had rejected her. She is not HIV positive. She is under weight and this is fluctuating, and she is above average in height.

Apart from a chest infection and cold, I have only seen N.D twice since she started the Ligan Flax seed program in Nov 05.

Nqobile had major discipline issues and attitude problems before the flax seed, very argumentative and defiant. Since starting the Flax seed within a month I notice her patience and temperance has improved. To communicate with her is easier, and she seems more settled within the environment.

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name C.M.

Address/Contact TLHF

City: Mababne Country Swaziland, Southern Africa.

Age 11

Date Nov 05

Date Dec 05

Date Jan 06

Date Feb 06

**Pre-Supplementation    30 Day Supplementation    60 Day Supplementation    90 Day Supplementation**

Height 137.5 cm	Height 137.5 cm	Height 137.5cm	Height 136cm
Weight 27kgs	Weight 29kgs	Weight 27kgs	Weight 28kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Sad	Psychological Test Sad	Psychological Test Happy	Psychological Test Happy

### Variables

**Pre-supplementation    30 Day supplementation    60 Day Supplementation    90 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic Children's Home	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy Abscess in groin	Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name C.M.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 11

Date March 06

Date April 06

Date May 06

Date June 06

**120 Day Supple**

**150 Day Supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Height 139.5cm	Height 141cm	Height 141cm	Height 141
Weight 28kgs	Weight 29kgs	Weight 31kgs	Weight 31kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

**120 Day supple**

**150 Day supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic S/A	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status SA
Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

C.M mother died of Aids and his father rejected him, as well as this the grandmother was unable to care for him. He does not have HIV himself and has been incredibly healthy for the past 11 months. I saw him before the Ligan flax seed was commenced in November 05 with a groin abscess, since then I have not needed to see him health wise, and he has remained fit and strong.

Two months after starting the Flax seed program C.M started to increase significantly in weight, since commencing the programe he has put on 4 kgs and 4cm in height.

One of the major changes I have noticed is the change in attitude, before the Flax program he was withdrawn and isolated himself. He found it hard to relate to others. It has been amazing to see him open up to others, to see him joining and leading games, and leaving his house to do more outside. He appears more confident in his approach to life and less unstable.

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name L.K.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa.

Age 10

Date Jan 06

Date Feb 06

Date March 06

Date April 06

**Pre-Supplementation    30 Day Supplementation    60 Day Supplementation    90 Day Supplementation**

Height 128.5cm	Height 128.5cm	Height 132cm	Height 132.5cm
Weight 25kgs	Weight 26kgs	Weight 28kgs	Weight 29kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Sad	Psychological Test Happy	Psychological Test Sad	Psychological Test Happy

### Variables

**Pre-supplementation    30 Day supplementation    60 Day Supplementation    90 Day Supplementation**

Total caloric intake 800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic stats Homestead	Socioeconomic status Children's Home	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy N/A	Medical Therapy Multi Vitamins long term	Medical Therapy Tooth Extraction	Medical Therapy Flu

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name L.K.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 10

Date May 06

Date June 06

Date July 06 Date \_\_\_\_\_

**Pre-Supplementation 30 Day Supplementation 60 Day Supplementation 90 Day Supplementation**

Height 134cm	Height 134.5cm	Height 136cm	Height
Weight 30kgs	Weight 31kgs	Weight 31cm	Weight
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

**120 supplement 150 Day supplementation 180 Day Supplementation 210 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic S/A	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy Coughing	Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

L.K came to us in January 06. She came to the farm after losing her immediate family to Aids, and had no other relatives who could care for her. She does not have Aids herself but came to the farm as a small, but strong girl.

I commenced her on the Ligan Flax seed in the January of 06 after this time she put on a kilograme a month, she has put on 6 kgs since she has been with us and 7.5cm. She grew 3.5cm 60days into the program.

I have only seen L.K for flu once in the last 6 months.

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name Z.M.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 12

Date Nov 05

Date Dec 05

Date Jan 06

Date\_ Feb 06

**Pre-Supplementation    30 Day Supplementation    60 Day Supplementation    90 Day Supplementation**

Height 141cm	Height 141cm	Height 142cm	Height 142cm
Weight 31kgs	Weight 31kgs	Weight 32kgs	Weight 32kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Sad	Psychological Test Sad	Psychological Test Sad	Psychological Test

### Variables

<b>Pre-supplementation</b>	<b>30 Day supplementation</b>	<b>60 Day Supplementation</b>	<b>90 Day Supplementation</b>
Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic Children's Home	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)



# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name Z.M.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 13

Date March 06

Date April 06

Date May 06

Date June 06

**120 Day Supple**

**120 Day Supplementation**

**150 Day Supplementation**

**210 Day Supplementation**

Height 144.5cm	Height 145cm	Height 145cm	Height 145cm
Weight 33kgs	Weight 32kgs	Weight 36kgs	Weight 33kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

**120 Day supplem**

**150 Day supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic S/A	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy N/A	Medical Therapy N/A	Medical Therapy Infected bite mark	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

Z.M came to us when his parents died of Aids, and he suffered severe abuse at the hands of a family member. He does not have Aids himself and since he has been with us I have only seen him once since he has started the Flax in November 05.

He has gained a total of 5kgs since November, the most significant being after 120days where he gained 4 kgs in one month.

Due to the abuse he suffered he found relating to people hard, especially adults. I have found that over the last 4 months he has been more approachable and welcoming to physical affection when before he would reject and be hostile towards it.

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name S.V.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age\_12

Date Nov 05

Date Dec 06

Date Jan 06

Date Feb 06

**Pre-Supplementation   30 Day Supplementation   60 Day Supplementation   90 Day Supplementation**

Height 144.5cm	Height 145cm	Height 145cm	Height 145cm
Weight 32kgs	Weight 33kgs	Weight 32kgs	Weight 32kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

**Pre-supplementation   30 Day supplementation   60 Day Supplementation   90 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic Children's Home Status	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name S.V.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 13

Date March 06

Date April 06

Date May 06

Date June 06

**120 Day Supple**

**150 Day Supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Height 147cm	Height 148cm	Height 148cm	Height 148cm
Weight 32kgs	Weight 33kgs	Weight 36kgs	Weight 35kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

**120 Day supple**

**150 Day supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic S/A	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy N/A	Medical Therapy N/A	Medical Therapy Cough therapy	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

S.V came to us after his mother died of Aids and his grandmother was unable to care for him anymore. He does not have Aids himself.

Although he is underweight for his age, he average height.

I have never had to see S.V healthwise since he started the Flax seed program in November 05.

He has an even and very approachable attitude and nature.

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name M.D.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 13

Date Nov 06

Date Dec 06

Date Jan 06

Date Feb 06

**Pre-Supplementation   30 Day Supplementation   60 Day Supplementation   90 Day Supplementation**

Height 138.5cm	Height 147cm	Height 148cm	Height 148cm
Weight 41kgs	Weight 42kgs	Weight 44kgs	Weight 43.5
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Sad	Psychological Test Sad	Psychological Test Happy	Psychological Test Happy

### Variables

**Pre-supplementation   30 Day supplementation   60 Day Supplementation   90 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic Children's home	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name M.D.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 14

Date March 06

Date April 06

Date May 06

Date June 06

**120 Day Suppleme 150 Day Supplementation 180 Day Supplementation 210 Day Supplementation**

Height 152cm	Height 152cm	Height 152cm	Height 153cm
Weight 44kgs	Weight 44.5kgs	Weight 45kgs	Weight 46kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Sad	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

**120 Day supplem 150 Day supplementation 180 Day Supplementation 210 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic S/A	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy Allergy/ hayfever	Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

M.D came to us after both his parents died of Aids. He does not have Aids himself and I have only had to see him twice since he started the Ligan Flax seed program in Nov 05.

Since commencing the Ligan Flax seed program he immediately put on 3kgs in 60days, he has a total weight gain of 5 kgs since Nov 05. Within the first 30days of commencing the Flax seed program he had a 9cm increase in height, before the program he was 22 cm below average height for age. He has had a 14cm height increase in 6 months he is now only 7 cm below average height for age.

In a same 6 month monitored period before the flax seed program he increased 2cm in height and had no weight gain.



# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name B.N.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 6

Date Nov 05

Date\_ Dec 05

Date Jan 06

Date Feb 06

**Pre-Supplementation    30 Day Supplementation    60 Day Supplementation    90 Day Supplementation**

Height 126cm	Height 126cm	Height 127cm	Height 127cm
Weight 22.5kgs	Weight 25kgs	Weight 24kgs	Weight 24kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

**Pre-supplementation    30 Day supplementation    60 Day Supplementation    90 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic Children's Home	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A	Medical Therapy Treatment For Athsma

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name B.N.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 7

Date March 06

Date April 06

Date May 06

Date June 06

**120 Day Supplemen    150 Day Supplementation    180 Day Supplementation    210 Day Supplementation**

Height 128cm	Height 128cm	Height 128cm	Height 129cm
Weight 25kgs	Weight 24kgs	Weight 24.5kgs	Weight 27kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count

### Variables

**120 Daysupple    150 Day supplementation    180 Day Supplementation    210 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic S/A	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy Broken Leg	Medical Therapy Broken Leg	Medical Therapy Twisted Knee	Medical Therapy Not any

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

B.N is a young boy who ran away from an abusive homestead after his parents both died of Aids. He himself does not have Aids and has not had to come for me with any opportunistic infections. The only issue I have had to deal with is a broken leg.

He is above average both weight and height , he had a significant weight gain within the first 30 days gaining 3 kgs and has gained 5 kgs intotal.

Before starting the feeding program B.N suffered with being the youngest in the home, he lacked confidence and self esteem. I have noticed that he is finding forming relationships easier and is a key influence within the home.

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name S.B.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 17

Date Nov 05

Date Dec 05

Date Jan 06

Date Feb 06

**Pre-Supplementation 30 Day Supplementation 60 Day Supplementation 90 Day Supplementation**

Height 160cm	Height 166cm	Height 167cm	Height 167cm
Weight 55kgs	Weight 55kgs	Weight 57kgs	Weight 58kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy	Psychological Test Happy	Psychological Test Sad	Psychological Test Happy

### Variables

**Pre-supplementation 30 Day supplementation 60 Day Supplementation 90 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic Childrens Homes	Socioeconomic status S/A	Socioeconomic status Homestead Visit	Socioeconomic status S/A
Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name S.B.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 18

Date March 06

Date April 06

Date May 06

Date June 06

**Pre-Supplementation**

**30 Day Supplementation**

**60 Day Supplementation**

**90 Day Supplementation**

Height 169cm	Height 171cm	Height 171cms	Height 171cm
Weight 55kgs	Weight 59kgs	Weight 59.5 kgs	Weight 60kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

**120 Daysupple**

**150 Day supplementation**

**180 Day Supplementation**

**210 Day Supplementation**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic S/A	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy N/A	Medical Therapy Headaches	Medical Therapy Headaches	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

S.B came to us after his mother abandoned him, and his father was abusive in the homestead. He is not HIV positive.

S.B started the Ligan Flax seed program in November 05, he has remained fit and well over the past 11 months with only headache complaints which we have isolated as possible eye strain.

He is under weight and height for his age however after 30 day of starting the flax seed he had a 2 kgs weight gain, and 2 cm in height. Despite an episode when he felt unwell and lost weight his progress has been constant in total gaining 4.5 kgs and 5 cm in height.

His attitude before commencing the Ligan Flax seed was poor, he was a bully, and poor respect secondary to what he had learned while growing up in his homestead. Within 3 months of starting the Flax this had changed an the bullying decreased. 150 days into the program, the bullying has ceased and his attitude has become more of a servant now literally washing the feet of those he once bullied.

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name Z.M.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 12

Date Jan 06

Date Feb 06

Date March 06

Date April 06

**Pre-Supplementation    30 Day Supplementation    60 Day Supplementation    90 Day Supplementation**

Height 134cm	Height 138.5cm	Height 138	Height 138cm
Weight 29kgs	Weight 28kgs	Weight 28kgs	Weight 30kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Sad	Psychological Test Happy	Psychological Test Happy	Psychological Test Happy

### Variables

<b>Pre- suppleme</b>	<b>30 Day supplementation</b>	<b>60Day Supplementation</b>	<b>90 Day Supplementation</b>
Total caloric intake 800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic Homestead	Socioeconomic status Children's Home	Socioeconomic status Children's Home	Socioeconomic status S/A
Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)

# Observational Prospective Study Data Sheet

## Flax Hull Lignans

AIDS Research & Assistance Institute

Participant Name Z.M.

Address/Contact TLHF

City Mababne Country Swaziland, Southern Africa

Age 12

Date May 06

Date June 06

Date July 06

Date \_\_\_\_\_

**120 Day Supplem    150 Day Supplementation    180 Day Supplementation    210 Day Supplementation**

Height 140cm	Height 140cm	Height 140cm	Height 140cm
Weight 31kgs	Weight 31kgs	Weight 31kgs	Weight 31kgs
BMI	BMI	BMI	BMI
Prealbumin	Prealbumin	Prealbumin	Prealbumin
Albumin	Albumin	Albumin	Albumin
HIV Viral Load	HIV Viral load	HIV Viral Load	HIV Viral load
CD4 count	CD4 count	CD4 count	CD4 count
Psychological Test Happy	Psychological Test Happy	Psychological Test Sad	Psychological Test Happy

### Variables

**120 Day supplem    150 Day supplementation    180 Day Supplementation    210 Day Supplement.**

Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800	Total caloric intake 1800
Socioeconomic S/A	Socioeconomic status S/A	Socioeconomic status S/A	Socioeconomic status S/A
Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A	Medical Therapy N/A

Attending Physician/Counselor/Administrator Emma Fishlock (RGN)



Z.M came to us in the Jan of 06, both his parents have died of HIV and he was neglected and ill treated by neighboring homesteads. He is not HIV positive.

He was commenced on the Ligan Flax feeding program in the Feb 06.

The most significant improvement noticed has been in his height, within 5 months he has had 6 cm growth in height after 30days he grew 4cm in 2 months.

I have not seen Z.M for any health complaints in the last 5 months.

# Observational Update 08/11/06

## Flax Hull Lignans

AIDS Research & Assistance Institute

Emma Fishlock (RGN) turned in new blood test results on 3 of the AIDS patients that she works with in Swaziland. M.D., M.Dl. and S.T. show progress in their blood levels from 02/10/06 to 08/10/06. Emma reported, "Here are the recent CD-4 counts. M's results are astounding! I've included Feb reports for you to compare. The pathologist said that if he were to be retested for HIV, the results would come back as negative, he's doing that well!!"

The blood levels speak for themselves.

### M. D.

#### 02/10/06 CD4 and Viral Load results

HIV -1 RNA copies .....< 40 cp/ml

Flow Cytometric Analysis

> CD4 cell %	41%	30-60 norm
CD4 count	1908/ul	H 600-1500

### M.D.

#### 08/11/06

CD4 cell %	45.82 %	Norm 31-47
CD4 count	2077/uL	H 650-1500

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### M. Dl.

#### 02/10/06

> HIV -1 log units		3.552
> HIV - RNA copies		3566 cp/ml
> CD4 Cell %	18.21 %	L 30-60
CD4 Cell Count	569 /ul	L 600-1500

#### 08/11/06

CD4 cell %	21.53%	Norm 30-60
CD4 cell count	634 /ul	Norm 600-1500

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### S. T.

#### 02/10/06

HIV RNA copies		< 40 cp/ml
CD4 Cell %	31.5 %	31-47 norm
CD4 count		661 /ul

**08/11/06**

**S. T.**

CD4 cell %

22.36%

Norm 31-47

CD4 cell count

697/uL

Norm 600-1500