Hallo zusammen,

Ich beschäftige mich gerade mit Vitamin B6 und den Auswirkungen auf Hormone.
Ich komme darauf, weil ich in letzter Zeit auf bestimmte Lebensmittel allergisch reagiere und erfahren habe dass dies mit dem Diaminoxidaseenzym (DAO) zusammenhängt, welches Vitamin B6 abhängig ist. Dao baut Histamin ab. Wenn nun Mangel an dem Enzym besteht (durch B6 Mangel oder angeborene [seltene] Schwäche) dann gibt das allergische Reaktionen. Jedenfalls bin ich in dem Zusammenhang dann auch auf die Rolle von B6 und Hormonen gestoßen und mir fiel wieder ein dass es heißt B6 könne Akne verschlimmern. Ich weiß nicht wie ich zu B6 stehen soll.
Würd mich freuen wenn ihr eure Meinung dazu abgeben würdet...

Erstmal zum Thema Allergie

Wine and headache.

Jarisch R, **Wantke F**.

Dermatologic and Pediatric Allergy Clinic, Vienna, Austria.

Headache can be induced by histamine in wine in patients suffering from histamine intolerance, a disease characterized by **impaired histamine degradation** based on reduced diamine oxidase activity or a lack of the enzyme. Diamine oxidase is localized in the jejunal mucosa and is the most important enzyme metabolising histamine. It is competitively inhibited by alcohol and numerous drugs. In preliminary investigations, assessment of diamine oxidase levels gave decreased activity (0.03 nKat/l) in patients with histamine intolerance compared to healthy controls (0.07 nKat/l). In pregnancy, diamine oxidase levels are known to be about 500-fold elevated, giving mean levels of 25.0 nKat/l. Other biogenic amines such as phenylethylamine or serotonin may be causative for wine/food-induced headache. In experimental models, headache has been induced by histamine infusion as well as red wine provocation. Histamine-induced headache is a vascular headache likely to be caused by nitric oxide which probably represents a key molecule in vascular headaches. A histamine-free diet is the treatment of choice for patients with histamine intolerance and chronic headache. To start treatment, an antihistamine (H1 blocker) for 14 days as well as a histamine-free diet for at least 4 weeks are recommended. Clinical improvement to the diet as well as in vitro tests for plasma histamine and diamine oxidase in the serum as well as vitamin B6 levels have to confirm the diagnosis. As supportive treatment, **a vitamin B6 (pyridoxal phosphate) substitution appears useful in histamine-intolerant patients as pyridoxal phosphate seems to be crucial for diamine oxidase activity.** Histamine intolerance, based on reduced diamine oxidase activity or a lack in the enzyme is causative for wine/food-induced chronic headache. According to the localization of diamine oxidase in the jejunal mucosa, histamine intolerance is primarily a disease of intestinal origin. A histamine-free diet is the treatment of choice in histamine-intolerant patients suffering from chronic headache. In addition, it is also

important to avoid diamine-oxidase-blocking drugs and alcohol which act as inhibitors of diamine oxidase. As avoidance of histamine-rich food is simple, inexpensive and harmless treatment, histamine-containing food such as cheese and alcoholic beverages should be labeled.

Vitamin B-6 nutriture and plasma diamine oxidase activity in pregnant Hispanic teenagers.

Martner-Hewes PM, Hunt IF, Murphy NJ, Swendseid ME, Settlage RH.

Vitamin B-6 status was assessed by measuring erythrocyte glutamic-pyruvic transaminase (EGPT) indices in 122 pregnant Hispanic teenagers. Seventeen percent were vitamin B-6 deficient (EGPT indices greater than 1.25) at the initial interview (first or second trimester). A daily supplement of 5 mg vitamin B-6, beginning at initial interview, did not reduce prevalence of vitamin B-6 deficiency at final interview (third trimester). No association was found between EGPT indices greater than 1.25 and the outcome of pregnancy. The activity of diamine oxidase (DAO), a vitamin B-6-dependent enzyme produced by the placental decidua, was measured in maternal plasma. At initial and final interviews, plasma-DAO activity was increased by in vitro addition of pyridoxal-5'-phosphate. The activity in early pregnancy was positively associated with dietary vitamin B-6 intake and was lower in teenagers with EGPT indices greater than 1.25 at the final interview. **Findings suggest that plasma-DAO activity is influenced by vitamin B-6 status.**

Zinc, vitamin B-6, and other nutrients in pregnant women attending prenatal clinics in Mexico.

Hunt IF, Murphy NJ, Martner-Hewes PM, Faraji B, Swendseid ME, Reynolds RD, Sanchez A, Mejia A.

School of Public Health, University of California, Los Angeles 90024.

Biochemical measurements and 24-h dietary recalls were conducted early (18.9 +/- 5.9 wk) and late (35.1 +/- 2.0 wk) in pregnancy in women attending clinics in Montemorelos, Mexico. Mean weight gain per week (0.4 +/- 0.2 kg) and birth weight (3381 +/- 456 g) were normal. Intakes tended to decline during pregnancy and declined significantly for zinc (p less than 0.05) and vitamin B-6 (p less than 0.03). Mean Zn intake late in pregnancy was low (7.8 +/- 3.3 mg/d). Various supplements were taken but none contained Zn. During pregnancy mean plasma Zn levels fell (p less than 0.001) and late in pregnancy 57% of the women had values suggestive of poor Zn status (less than or equal to 8.1 mumol/L). These data indicate that Zn intakes of approximately 8 mg/d will not maintain plasma Zn levels in late pregnancy. Erythrocyte glutamic-pyruvic transaminase (EGPT) index and the index of **diamine oxidase (DAO), a vitamin B-6-requiring enzyme of placental origin, were correlated suggesting that DAO index may be useful in evaluating vitamin B-6 status in pregnancy.**

Östrogen und auch Glucocorticoide erhöhen den B6 Bedarf. In der Schwangerschaft werden deshalb wohl auch öfters B6 Mängel festgestellt. Da ich ja beides nehme kann es also durchaus sein, dass ich zuwenig B6 bekomme (für Fragen zu diesem Punkt: nein, ich bin keine Frau, noch empfehle ich diese Medis allgemein gegen Haarausfall. Nicht das sich jetzt einer Dexamethasone besorgt. Hier muss man genau seine Hormonwerte für kennen).

Is the menstrual cycle affecting the skin prick test reactivity?

Kirmaz C, **Yuksel H**, **Mete N**, **Bayrak P**, **Baytur YB**.

Department of Internal Medicine, Celal Bayar University, Manisa, Turkey.

Allergen skin prick tests (SPT) are very sensitive and specific tests to detect allergic sensitization in atopic patients. Certain factors like antihistamines, antidepressant therapies or circadian rhythms can alter the results of SPT. In women, the changes in endogenous hormone levels throughout the menstrual cycle may affect the allergic responses and natural course of allergic diseases. The aim of this study was to investigate the probable influence of the phases of the menstrual cycle on SPT reactivity to allergen extracts and histamine. Forty-two female patients with seasonal allergic rhinoconjunctivitis were enrolled in the study. Skin prick test reactivities to allergens and histamine were measured at the beginning of the menstrual cycle (3rd or 4th day), mid-cycle (14th or 15th day) and end-cycle (27th or 28th day) consecutively. Serum estradiol, progesterone, luteinizing hormone (LH), and follicle stimulating hormone (FSH) levels were determined simultaneously. We observed the most significant reactions to allergens when SPT is performed at mid-cycle. However, SPT reactivity to histamine did not vary throughout the menstrual cycle. Serum estradiol and LH levels showed positive correlation with SPT reactivity to allergens at mid-cycle. Our results suggest that SPT give the best results when they are performed at mid-cycle. Additionally, **allergens seem to cause mast cell degranulation to a greater extent in subjects in which endogenous hormones like estradiol and LH are elevated.**

Das ist nun halb so wild. Mein Interesse geht eher in die Richtung warum es heißt dass sich von B6 Akne verschlimmert und welche Rolle da die Hormone spielen.

Acneiform eruption due to "megadose" vitamins B6 and B12.

Sherertz EF.

Department of Dermatology, Bowman Gray School of Medicine, Winston-Salem, North Carolina 27103.

Medications and other exogenous factors are known to be capable of exacerbating acne or precipitating acneiform eruptions. This case illustrates an eruption resembling acne rosacea that was temporally associated with daily ingestion of high-dose B vitamin supplement. The eruption failed to respond to the usual treatment regimens for rosacea, but promptly improved when use of the vitamin supplement was discontinued.

[The problem of vitamin B6/B12 acne. A contribution on acne medicamentosa (author's transl)]

[Article in German]

Braun-Falco O, **Lincke H**.

Deterioration of acne vulgaris or eruption of an acneiform exanthema could be established during treatment with vitamin B6 and/or vitamin B12 in 14 patients. Females were by far the more frequently affected. The appearance of skin symptoms, even outside the age groups typically affected by acne vulgaris is characteristic. The clinical appearance of acneiform exanthema occurring during treatment with vitamin B6 or B12 consists of loosely disseminated small papules or papulopustules on the face (especially on the forehead and chin), on the upper parts of the back and chest and spreading to the upper arm. The pathogensis of the change is not yet certain. The acneiform rash generally fades within a short time after vitamin B6 or vitamin B12 treatment has been stopped.

Mir ist wie gesagt die Rolle von B6 nicht eindeutig. Die Studien sind ja auch mit B12 durchgeführt worden.
Nun gibt einige Studien die die Rolle von B6 und Hormonen angehen, allerdings sind dazu meist keine Abstracts vorhanden.

Vereinzelte Infos zu B6:

Acu-cell.com

Anyone suffering from low blood sugar episodes should avoid larger amounts of Vitamin B6 and C, which can cause blood sugar to drop even more, but they are generally helped with extra niacinamide and/or biotin.

Those with a tendency for mild **Hyperthyroidism** (see also Acu-Cell "Bromine") may benefit from PABA, another member of the B-vitamin complex, but they should be careful taking extra Vitamin B6. Higher amounts of Vitamin B6 will also increase magnesium retention, although this only takes place following long-term ***oral*** supplementation, while regular Vitamin B6 ***injections*** will quickly result in a high magnesium / low calcium ratio.

Since one major effect of taking high B-complex vitamins for a lengthy time period is an increase in zinc and potassium uptake, this could become quite detrimental for someone who is prone for ovarian cysts, painful menstruation, prostatitis, chronic bladder infections, or inflammatory gallbladder disease

While B-complex vitamins
may help with ***high*** estrogenic-types of PMS, larger amounts will worsen ***low*** estrogenic-types of PMS or even lead to suicidal tendencies in some women. A higher intake of B-vitamins can trigger heart palpitations with congestive heart disease **or above-normal thyroid or adrenal functions**, and it may
aggravate insomnia, anxiety or stress disorders.

Eine der wenigen freien Studien dazu:

> **The interactions between vitamin B6 and hormones.**
>
> **Rose DP**.
>
> PIP: Vitamin-B6 interacts with both endogenous and exogenous hormones, and the data presented here concern mostly estrogens (E). E steroids compete with pyridoxal phosphate-dependent apoenzymes for the cofactor in vitro, and a similar effect probably occurs in vivo. Use of E-containing oral contraceptives was associated with an abnormality of tryptophan metabolism similar to that seen in dietary vitamin-B6 deficiency. This was corrected by pyrodoxine administration. However, plasma pyridoxal phosphate concentrations, and other indexes of vitamin-B6 nutritional status, were abnormal in only a minority of these patients. Vitamin-B6 deficiency occurred also in pregnancy,and it was proposed as at least 1 of the factors concerned in the etiology of preeclampsia. **Although there was some indication that both corticosteroids and thyroid hormones increase the requirement for vitamin-B6 and modify the activiteis of pyridoxal phosphate-dependent enzymes, these relationships have received limited attention. Current work, however, reveals some interesting associations between vitamin-B6 and the regulation of anterior pituitary hormones.** Mediation of these effects seems to occur at the hypothalmic level via the 2 neurotransmitters 5-hydroxytryptamine and dopamine, both of which are synthesized by vitamin-B6-dependent metabolic pathways. Potential clinical application of these results and observations is management of hyperprolactinemia, though controversy over the efficacy of pyridoxine therapy in this situation exists and remains unresolved.

Leider wird das hier nicht genau erläutert. Wenn man nach den Infos auf Acu-cell.com geht wird die Nebenniere angeregt, was auch die Beziehung zu Akne erklären würde.

Versch. Websites:

> …It also takes part in producing brain neurotransmitters (chemical messengers) such as serotonin, in releasing energy stored in cells, and in manufacturing red blood cells. Vitamin **B_6 also helps to keep hormones in balance** and the immune system functioning properly.
>
> …Vitamin B6 plays a role in modulating the effects of hormones, including male and female sex hormones and adrenal hormones.
>
> …The adrenal gland uses nutrients such as TMG (betaine), tyrosine, vitamins B5, B6 and C to maintain function and produce its hormones

Ein möglicher Grund für Akne: ?

Stimulation of rat liver glycogenolysis by vitamin B6: a role for adrenal catecholamines.

Lau-Cam CA, **Thadikonda KP**, **Kendall BF**.

Department of Pharmaceutical Sciences College of Pharmacy and Allied Health Professions St. John's University Jamaica, NY 11439.

The administration of a single, 100-300 mg/kg ip, dose of a B6 vitamer to rats **resulted in an almost immediate and gradual mobilization of the liver glycogen and a concomitant elevation of the serum glucose**, with the order of potency being pyridoxal greater than pyridoxamine greater than pyridoxine. Since **the B6 vitamer also stimulated the secretion of adrenal catecholamines** and the accumulation of liver cAMP, and a pretreatment with selected blocking agents conferred significant protection against the glycogen depletion in the order of potency propranolol + phentolamine greater than propranolol greater than verapamil greater than phentolamine, a role for an adrenomedullary catecholamine-stimulated, beta-adrenoceptor-mediated, activation of the glycogen cascade system was suggested. This assumption was confirmed by verifying pyridoxal to possess virtually no effect on the liver glycogen of adrenalectomized rats.

Das spricht alles sehr für Akneverschlechterung.

Meine Frage ist nun, inwiefern die folgenden Infos eher dagegen sprechen

http://lpi.oregonstate.edu/infocenter/vitamins/vitaminB6/

Hormone function

Steroid hormones, such as estrogen and testosterone, exert their effects in the body by binding to steroid hormone receptors in the nucleus of the cell and altering gene transcription. **PLP binds to steroid receptors in such a manner as to inhibit the binding of steroid hormones, thus decreasing their effects.** The binding of PLP to steroid receptors for estrogen, progesterone, testosterone, and other steroid hormones suggest that the vitamin B_6 status of an individual may have implications for diseases affected by steroid hormones, such as breast cancer and prostate cancer

Das hier wäre ja an sich gut:

PLP binds to steroid receptors in such a manner as to inhibit the binding of steroid hormones, thus decreasing their effects

Allerdings weiß man nicht inwiefern das unterschiedlich stark verläuft.

> **The binding of PLP to steroid receptors for estrogen, progesterone, testosterone, and other steroid hormones…**

Eine Bindung an den Estrogenrezeptor wäre in meinem Fall extrem unvorteilhaft. Wenn die Bindung an E Rezeptoren überwiegt würde das auch Akne erklären.

Was meiner Einsicht nach jedoch gegen Akne spricht:

> Pyridoxal 5'-phosphate **plays a role in the regulation of steroid hormone activity**:
> **Physiological levels of pyridoxal 5'-phosphate interact with glucocorticoid receptors to downregulate their activity.**
>
> **Pyridoxal 5'-phosphate has also been shown to negatively modulate steroid-dependent gene expression induced by progesterone, androgen and estrogen hormones**.

PLP interagiert mit Glucocorticoidrezeptoren um ihre Aktivität runter zu fahren.

> http://www.acnem.org/journal/14-1_july_1995/pyridoxine-vitamin_b6.htm
>
> Glycogen phosphorylase requires PLP. **There is accumulating evidence that vitamin B6 affects the action of steroid hormones.** In a review of B6 and glucocorticoid action Compton and Cilowski[6] state that in vivo studies and cell culture experiments have demonstrated that **exogenous vitamin B6 or its precursors can antagonise the action of glucocorticoids.** They are unable to state however whether endogenous levels of vitamin B6 actually modulate glucocorticoid actions.
>
> Bender[7] has extensively reviewed the topic of oestrogen and vitamin B6 and concludes that moderate **vitamin B6 deficiency enhances the hyperplastic response of target tissues to steroid hormones**. In noting that this could be important in the induction and subsequent development of hormone dependent cancer of the breast or prostate, he suggests that vitamin B6 supplementation might act as a useful adjunct to other therapy in these cancers.

Hyperplastic Response bei B6 Mangel ? Also erhöhte Aufnahme ? Wäre gar nicht gut...

> **Effects of vitamin B6 deficiency and repletion on the uptake of steroid hormones into uterus slices and isolated liver cells of rats.**

Bender DA, **Ghartey-Sam K**, **Singh A**.

Department of Biochemistry, University College and Middlesex School of Medicine, University College London.

1. In vitro, pyridoxal phosphate extracts steroid-hormone receptors from tight nuclear binding (Cidlowski & Thanassi, 1981); **in vitamin B6-deficient rats there is increased and prolonged nuclear accumulation of oestradiol in the uterus and testosterone in the prostate, associated with enhanced biological responsiveness of these target tissues to steroid hormone action** (Symes et al. 1984; Bowden et al. 1986). 2. Slices of uterus from vitamin B6-deficient rats accumulated more [3H]oestradiol than did tissue from repleted animals. **Acute repletion with vitamin B6 (0.5-1 h before killing) further increased the uptake of the steroid.** 3. Isolated hepatocytes from vitamin B6-deficient rats accumulated more [3H]dexamethasone than did cells from repleted animals. Pre-incubation of the hepatocytes with pyridoxal phosphate resulted in a further increase in the uptake of the steroid. 4. **The results suggest that in addition to the putative role of pyridoxal phosphate in releasing steroid-hormone-receptor complexes from tight nuclear binding (Cidlowski & Thanassi, 1981), vitamin B6 deficiency may also increase the concentration of steroid-hormone receptors or enzymes and other steroid-binding proteins in target tissues.**

Increased target tissue uptake of, and sensitivity to, testosterone in the vitamin B6 deficient rat.

Symes EK, **Bender DA**, **Bowden JF**, **Coulson WF**.

Six-week old male rats were maintained for 4 weeks on a vitamin B6-free diet to cause a moderately severe degree of vitamin B6 depletion. This led to a significant reduction in the circulating concentration of testosterone in plasma (control = 8.36 +/- 1.68, deficient = 2.13 +/- 0.54 nmol/l), but had no effect on circulating concentrations of luteinizing hormone, or, in intact males, on the weight of the prostate relative to body weight. **In both intact and 24-h castrated animals vitamin B6 deficiency resulted in a significant increase in the uptake of [3H]testosterone into the prostate, and both increased and prolonged the specific nuclear retention of the steroid**, as assessed by the ratio of radioactivity in the nuclear pellet: the high speed supernatant fraction. **The results suggest that vitamin B6 has a function in the action of testosterone (and other steroid hormones), possibly in the recycling of receptors from the nucleus back into the cytosol after initial translocation. Vitamin B6 deficient animals have either a reduced rate of synthesis of testosterone or an increased rate of metabolic clearance compared with vitamin B6 supplemented controls, and this appears to be associated with enhanced target organ response to the hormone.**

Ich verstehe nicht warum das so ist. Die B6 freie Diät hatte Testosteronerniedrigung im Plasma zur Folge. Als Grund wird gesagt dass die

Syntheserate reduziert ist oder die „rate of metabolic clearance“ erhöht ist. Als Folge davon erhöht sich hiernach die Zielorgan-Aufnahme und Sensitivität bzgl. Testosteron, was schlecht wäre in Bezug auf Haarausfall und Akne.

Ich habe selbst die Erfahrung gemacht dass sich Akne verschlimmert hatte, als ich einen B-Komplex nahm (50er). Da man das aber nicht auf B6 zurückführen kann werde ich demnächst einen Versuch starten mit niedriger B6 Supplementierung (ca. 10mg).

Wenn jemand noch mehr über die Rolle von B6 in Bezug auf Nebennierenaktivität weiß, bitte antworten.

Gruß

Tristan

An Pilos und Tino. Ihr kennt meine Situation. Was hat das hier in Bezug darauf zu bedeuten:

> **Effect of vitamin B-6 deficiency on preference for several taste solutions in the rat.**
>
> **Chan MM**, **Kare MR**.
>
> The effect of dietary-induced vitamin B-6 (B-6) deficiency on the intake of the taste solutions, sodium chloride (NaCl), sodium saccharin (NaSacc), quinine sulfate (QS), and hydrochloric acid (HCl) was studied using a 48 hour, two-bottle choice technique. The B-6 deficient group demonstrated increased preference to 1.5 X 10(-1) and 3.0 X 10(-1) M NaCl compared to control ad libitum fed and control pair-fed groups. Total fluid intake on NaCl test days was also elevated in the B-6 deficient rats. There was no significant difference in the mean preference to NaSacc, QS, or HCl among the three groups. **Adrenal hypertrophy was observed in the deficient rats.** There was no change in the plasma level of Na and Zn but there was a reduction in urinary Na excretion. When the deficient rats were replenished by intraperitoneal injection of pyridoxine.HCl and **feeding with the control diet containing adequate B-6, the increased preference for NaCl was extinguished**, suggesting that the preference alteration was reversible. Urinary Na excretion also returned to normal.

Demnach besteht ein großer Zusammenhang zwischen NNR und B6 !
Schwere AGS Formen, Salzmangel etc...erhöhter Hunger auf Salz...

Deshalb interessieren mich auch folgende Studien so:

Indian J Med Res. 1985 Oct;82:333-40. Related Articles, Links

Effect of vitamin B6 deficiency on adrenal hormones in rat.

Uthappa NS, **Kalyankar GD**.

PMID: 4077178 [PubMed - indexed for MEDLINE]

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=4077178&query_hl=28&itool=pubmed_docsum

Indian J Exp Biol. 1986 Apr;24(4):213-6. Related Articles, Links

Role of adrenal steroids in retention and utilization of vitamin B6 in liver.

David S, **Kalyankar GD**.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=3770810&query_hl=28&itool=pubmed_docsum

Naika Hokan. 1966 Apr;13(4):205-16. Related Articles, Links

[Clinical studies on the relation between endocrine function and vitamin B6 metabolism. II. Vitamin B6 metabolism in patients with pituitary, adrenal diseases and diabetes mellitus]

[Article in Japanese]

Azechi S.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=6006121&query_hl=28&itool=pubmed_DocSum

J Nutr. 1965 Dec;87(4):407-11. Related Articles, Links

Some effects of vitamin B6 deficiency on rat pituitary glands.

Huber AM, **Gershoff SN**.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=5891566&query_hl=28&itool=pubmed_DocSum

C R Seances Soc Biol Fil. 1961;155:293-6. Related Articles, Links

[Adrenal cortical function and pyridoxine.]

[Article in French]

RATSIMAMANGA AR, **NIGEON-DUREUIL M**.

Proc Soc Exp Biol Med. 1959 Jan;100(1):111-4. Related Articles, Links

Relationship of vitamin B6 adrenocortical function in the rat.

EISENSTEIN AB.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=13634053&query_hl=28&itool=pubmed_DocSum

Acta Vitaminol. 1955 Oct;9(5):205-10. Related Articles, Links

[Pyridoxine, the pituitary and the adrenal cortex.]

[Article in Italian]

FOWST G.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=13275373&query_hl=28&itool=pubmed_DocSum

Proc Soc Exp Biol Med. 1951 Jun;77(2):312-5. Related Articles, Links

Relationship of pyridoxine deficiency to adrenal function in production of leucocytes in mice.

MUELLER JF, **WEIR DR**, **HEINLE RW**.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14854032&query_hl=28&itool=pubmed_DocSum

Stroke. 2004 Aug;35(8):1785; author reply 1785. Epub 2004 Jun 10. Related Articles, Links

Comment on:

- Stroke. 2004 Jan;35(1):12-5.

Homocysteine, vitamin B6, and endothelial dysfunction in circulatory disorders.

Tsuda K, **Nishio I**.

Publication Types:

- Comment
- Letter

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15192236&query_hl=41&itool=pubmed_DocSum

J Am Acad Child Adolesc Psychiatry. 2004 Aug;43(8):928-9. Related Articles, Links

Neuropathy due to hypovitaminosis following excessive weight loss.

Heiser P, **Teepker M**, **Moller JC**, **Theisen FM**, **Friedel S**, **Hebebrand J**, **Remschmidt H**.

Publication Types:

- Case Reports
- Letter

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15266188&query_hl=41&itool=pubmed_DocSum

Ann N Y Acad Sci. 1992 Sep 30;669:34-41; discussion 41-3. Related Articles, Links

Vitamin B6. Reservoirs, receptors, and red-cell reactions.

Leklem JE.

Department of Nutrition and Food Management, Oregon State University, Corvallis 97331-5103.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1444042&query_hl=26&itool=pubmed_docsum

Proc Nutr Soc. 1994 Nov;53(3):625-30. Related Articles, Links

Novel functions of vitamin B6.

Bender DA.

Department of Biochemistry and Molecular Biology, University College London.

Publication Types:

- Review

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7886061&query_hl=33&itool=pubmed_docsum

World Rev Nutr Diet. 1987;51:140-88. Related Articles, Links

Oestrogens and vitamin B6--actions and interactions.

Bender DA.

Publication Types:

- Review

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=3314189&query_hl=33&itool=pubmed_docsum