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Fertilité – Préconception

Homme – Femme : *Solutions nutritionnelles*

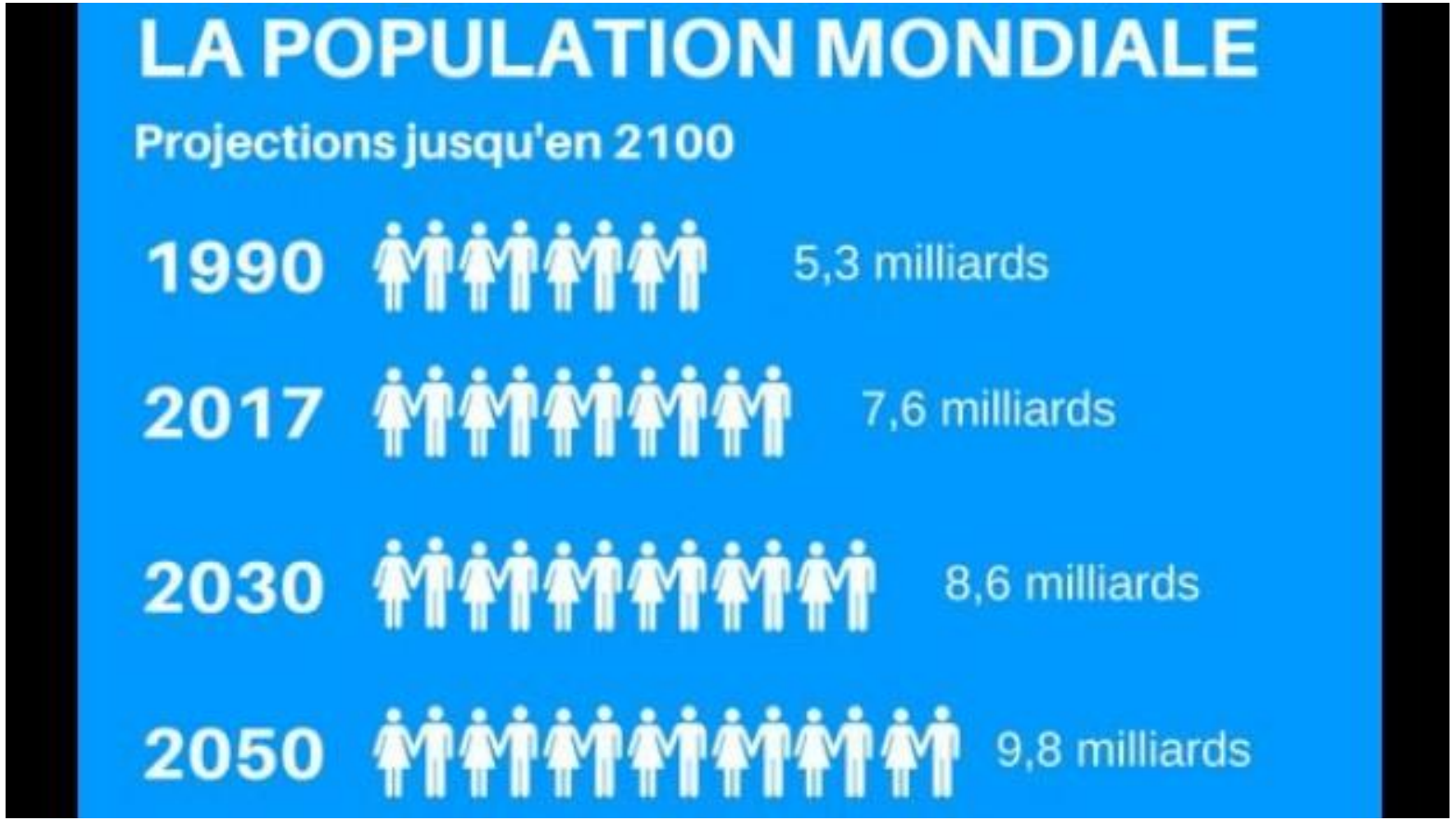
Dr. Naett

13-05-2020

FERTILITE

FERTILITE

INFERTILITE



INFERTILITE

TIMING DE LA PRISE EN CHARGE

1 COUPLE SUR 6 CONSULTE POUR DESIR DE GROSSESSE

80% DE GROSSESSE LA PREMIERE ANNEE

50% RESTANTES ENCEINTES APRES 2 ANS

15 à 20 % G par mois

INSEMINATION 10-15 %

FIV 30%

DELAI 1 AN AVANT 30 ANS

DELAI 6 MOIS APRES 35 ANS

PMA APRES 38 ANS ?

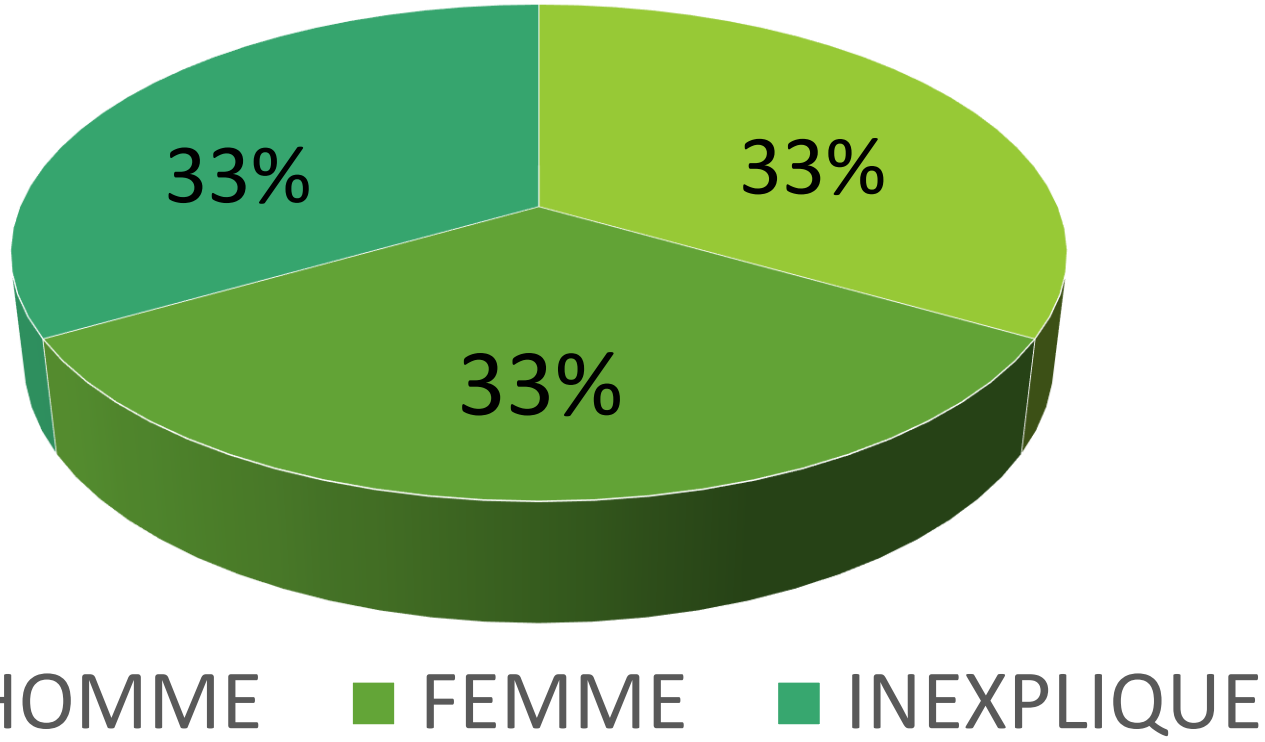
40 ANS 2X MOINS DE G 2X PLUS DE FAUSSE COUCHE

DELAI 6 MOIS MONITORING ET PMA

NECESSITE D'UN BILAN PREVENTIF ET PREPARATION POUR AUGMENTER LES CHANCES ET REDUIRE LE TIMING INTERET AVANT MAIS AUSSI PENDANT PMA (PHYSIQUE ET PSYCHOLOGIQUE)

CAUSES D'INFERTILITE

FERTILITE



INFERTILITE HOMME

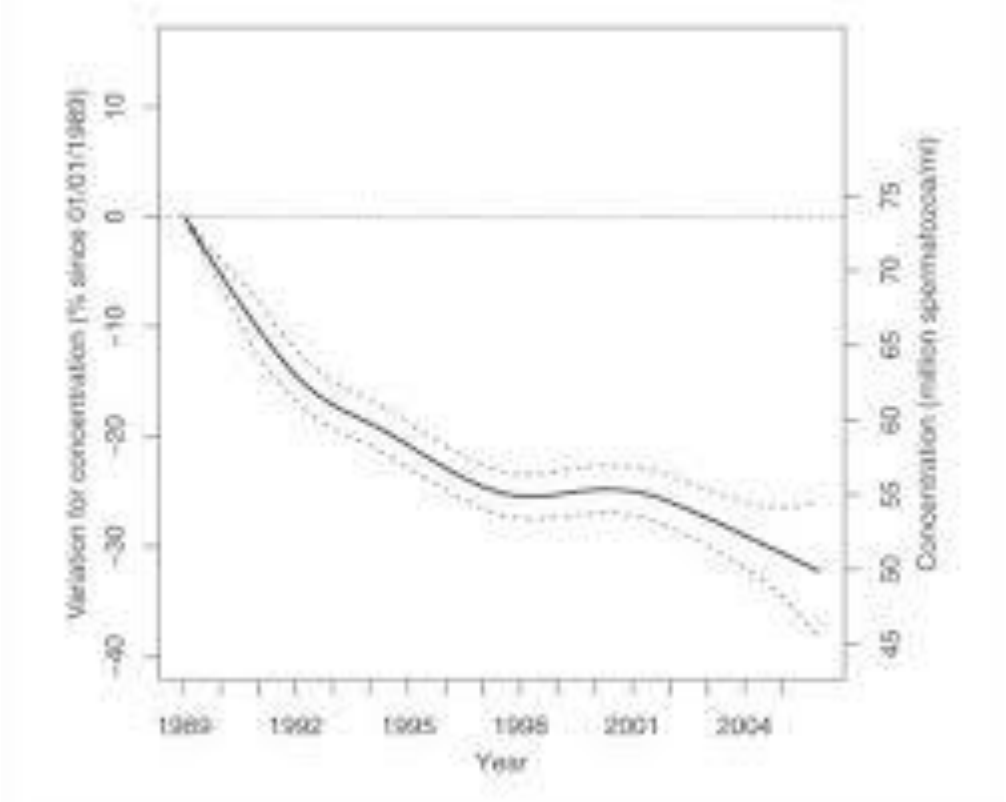
FERTLITE HOMME
moins 50% en 50 ans ?

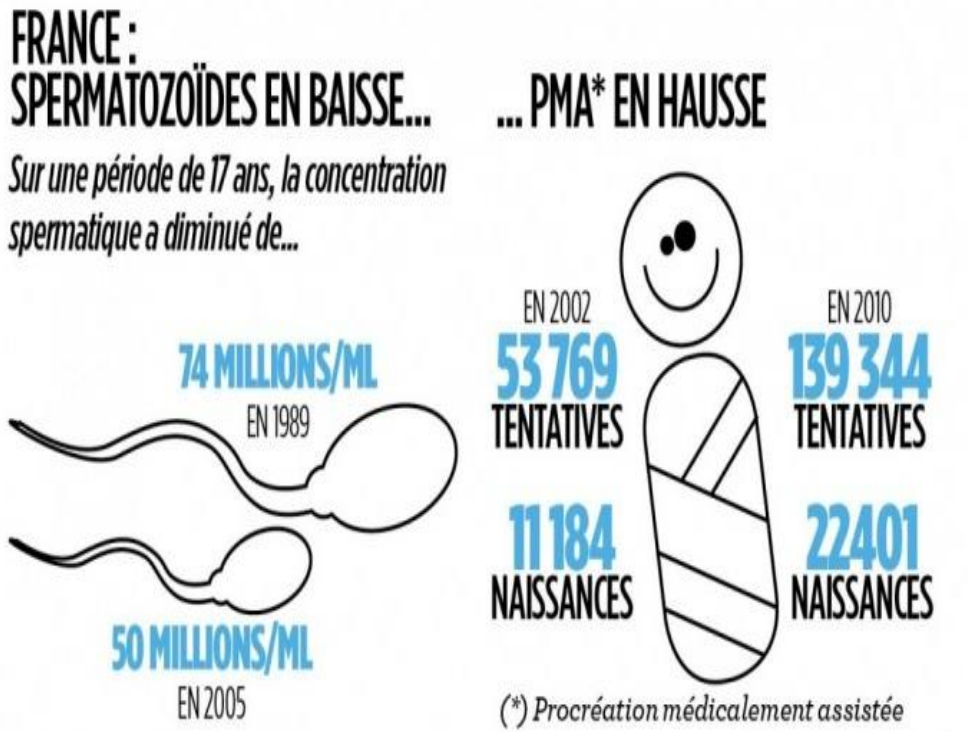
Fertilité masculine : l'enjeu du XXIe siècle ?

Enregistré le 18 novembre 2015, en direct du congrès de l'Association Française d'Urologie

« L'infertilité est devenue un vrai problème de santé publique », s'inquiète le **Pr Eric Huyghe** (Urologue, Andrologue, CHU de Toulouse). Elle touche aujourd'hui un couple sur 7 et est de cause masculine dans un cas sur deux. Chez l'homme, dans 50% des cas, l'interrogatoire et un examen clinique suffisent à trouver la cause de l'infertilité. Les examens génétiques (caryotype, l'analyse des micro-délétions du chromosome Y et l'analyse du gène CFTR) apportent, eux, une réponse dans 10 % des cas. Qu'advient-il alors, des 40 % d'infertilités masculines non-expliquées ? D'après le spécialiste, les nouvelles méthodes génétiques, et notamment le séquençage à haut débit, nous ont fait entrer dans une nouvelle phase de recherche mais « la tâche s'annonce immense. On sait aujourd'hui, qu'un gène sur 10 est dévolu à la fertilité. Or, actuellement, 256 gènes ont été étudiés et répondent à un phénotype d'infertilité masculine. »

INFERTILITE HOMME





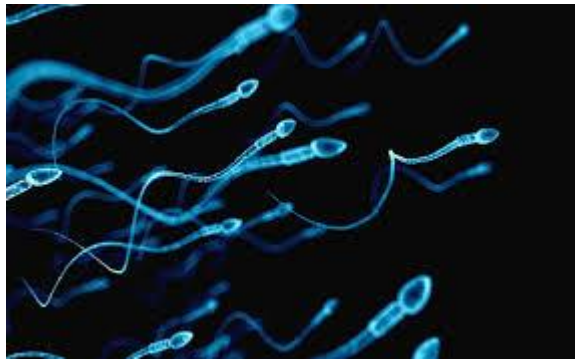
FERTILITE HOMME

- ANAMNESE
- EXAMEN CLINIQUE
- BILAN BIOLOGIQUE+NUTRITIONNEL
- BILAN HORMONAL

FSH, LH, Testosterone, SHBG, Oestradiol, DHEA, androstandiol glucuronide, Cortisol, Inhibine B, TSH, T3, T4, Ac Thyr

SPERMOGRAMME

SPERMOGRAMME



Spermiogénèse
70 jours

VOLUME 2-4 ml
NUMERATION 20-40 Million/ml OLIGOSPERMIE
> 100 M/ml POLYSPERMIE (inflammation)
MOBILITE > 40% et 25% mob progressif ASTHENOSPERMIE
FORME NORMALE > 4% critère de Krugger 20% OMS
TERATOSPERMIE

TEST DE SURVIE 24 H

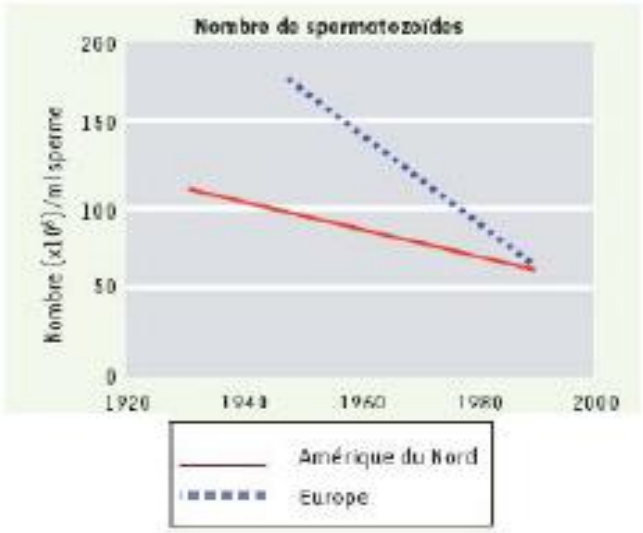
TEST DE FRAGMENTATION DNA < 15% normal <15-35%> moyen
>35% mauvais (test meilleur si testiculaire ?)
TEST DE DECONDENSATION DNA

IAC Test (insémination intra utérine avec conjoint)
Test sur ovocytes de hamster

!!!! IL N'EXISTE AUCUN TEST FIABLE POUR LA FECONDITE DU SPERME !!!

ENVIRONNEMENT

Détérioration de la fonction reproductive mâle



- Perturbateurs endocriniens
- Changements des styles de vie
- Exposition à la chaleur

- Métaux lourds
- Dérivés plastiques
- Pesticides
- Médicaments
- Chimiothérapie
- Radiothérapie
- Stress
- Chaleur
- Sport

NUTRITION

SURPOIDS 15% d'infertilité et augmentation // au surpoids
+ de fragmentation

Eviter : **Alcool**
Tabac
Gluten
Laitage
Pain blanc
Caféine à peu d'influence

Favoriser : Régime PALEO avec protéines animales et graisses cuites à basse T°, fruits, légumes.

De façon générale les spermatozoïdes sont sensibles au stress oxydatif en raison d'une division cellulaire intense (méïose) d'un ADN plus exposé et d'une forte teneur en acides gras polyinsaturés dans leur structure. La plupart des agents antioxydants auront potentiellement un effet bénéfique

Infertilité de l'Homme: Bilan nutritionnel

- Profil acides gras
- Zinc, sélénium, Cuivre
- Homocystéine
- 8OH Guanosine
- Intolérance au gluten

ZINC

- La déplétion en ZINC et le premier facteur lié à une diminution du nombre et de la mobilité des spermato.
- La baisse de zinc est proportionnelle à la baisse de la testo et la DHT
- La supplémentation est d'autant plus efficace que la testo est basse
- Taux de zinc dans le sperme chez adolescent (acné)

Intérêt Antioxydant
Transcription de l'ADN

Apport 20 à 40 mg

Zinc deficiency in men with Crohn's disease may contribute to poor sperm function and male infertility.

El-Tawil AM.

Andrologia. 2003 Dec;35(6):337-41.

Department of Gastroenterology, City Hospital, Birmingham, UK. atawil2003@hotmail.com

In Great Britain, married couples were reported to have between 1.9 and 2.1 children, while men with Crohn's disease had a mean of 1.2 and of 0.4 children before and after diagnosis, respectively. The role of zinc for male fertility is essential. Although lack of zinc in Crohn's disease is well established in up to 70% of patients, a possible relation between zinc deficiency and male subfertility in Crohn's disease remains unclear. This study is aimed at examining a possible link between zinc deficiency in men with Crohn's disease and male subfertility in this group of patients.

SELENIUM

Les seleno protéines sont importantes pour la structure du spermatozoïde
Elles jouent sur la numération et la morphologie. Un taux trop élevé comme trop bas peut être délétère
Une étude montre l'intérêt de l'associer à la Vit E.
Rôle possible dans les fausses couches.

INTERET Antioxydant
Synthèse des hormones thyroïdiennes

APPORT 100 mcg ou 3 noix du Brésil

Co Q 10

Particulièrement concentré dans la pièce intermédiaire il donne l'énergie pour le flagelle.
Antioxydant pour prévenir la lipoperoxydation au niveau du liquide séminal

INTERET Antioxydant
Energie mitochondriale

APPORT 100 à 200 mg

GLUTHATION N ACETYL CYSTEINE
GLUTAMINE CYSTEINE GLYCINE

- Antioxydant au niveau du liquide séminal. Chelateur du cuivre et du zinc

- APPORT 500 mg

VITAMINE C

Son action antioxydante a une répercussion sur l'oligo asthenospermie
même en cas de déficit léger

INTERET Antioxydant

APPORT 500mg

VITAMINE E

Son action antioxydante seule ou associé à la vit C ou au Sélénium
Augmente les paramètres du spermogramme et le taux de grossesses en PMA même sans modification du spermogramme

INTERET Antioxydant

APPORT 300 UI

VITAMINE B9 B12

Variant MTHFR et Fertilité

Améliore la numération et la motilité

INTERET: Méthylation- ATP

Effects of folic acid and zinc sulfate on male factor subfertility: a double-blind, randomized, placebo-controlled trial.

Wong WY, Merkus HM, Thomas CM, Menkveld R, Zielhuis GA, Steegers-Theunissen RP.
Department of Obstetrics and Gynecology, University Medical Centre Nijmegen, Nijmegen, The Netherlands.

Fertil Steril. 2002 Mar;77(3):491-8.

OBJECTIVE: To study the effects of folic acid and zinc sulfate treatment on semen variables in fertile and subfertile men. DESIGN: Double-blind, placebo-controlled interventional study. SETTING: Two outpatient fertility clinics and nine midwifery practices in The Netherlands. PARTICIPANT(S): One hundred eight fertile and 103 subfertile men. INTERVENTION(S): Both groups were randomly assigned to receive one of four treatments for 26 weeks: folic acid and placebo, zinc sulfate and placebo, zinc sulfate and folic acid, and two placebos. Folic acid was given at a daily dose of 5 mg, and zinc sulfate was given at a daily dose of 66 mg. MAIN OUTCOME MEASURE(S): Before and after treatment, standardized semen and blood samples were obtained for determinations of sperm concentration, motility, and morphology according to World Health Organization guidelines; semen morphology according to strict criteria; and blood folate and zinc concentrations. Effects of the four interventions were evaluated separately in subfertile and fertile men. RESULT(S): Subfertile men demonstrated a significant 74% increase in total normal sperm count and a minor increase of 4% abnormal spermatozoa. A similar trend was observed in fertile men. Pre-intervention concentrations of folate and zinc in blood and seminal plasma did not significantly differ between fertile and subfertile men. CONCLUSION(S): Total normal sperm count increases after combined zinc sulfate and folic acid treatment in both subfertile and fertile men. Although the beneficial effect on fertility remains to be established, this finding opens avenues of future fertility research and treatment and may affect public health.

SANS OUBLIER: EPA DHA

Hum Reprod. 2012 May;27(5):1466-74. doi: 10.1093/humrep/des065. Epub 2012 Mar 13.

Dietary fat and semen quality among men attending a fertility clinic.

Attaman JA[1], Toth TL, Furtado J, Campos H, Hauser R, Chavarro JE.

⊕ Author information

Abstract

BACKGROUND: The objective of this study was to examine the relation between dietary fats and semen quality parameters.

METHODS: Data from 99 men with complete dietary and semen quality data were analyzed. Fatty acid levels in sperm and seminal plasma were measured using gas chromatography in a subgroup of men (n = 23). Linear regression was used to determine associations while adjusting for potential confounders.

RESULTS: Men were primarily Caucasian (89%) with a mean (SD) age of 36.4 (5.3) years; 71% were overweight or obese; and 67% were never smokers. Higher total fat intake was negatively related to total sperm count and concentration. Men in the highest third of total fat intake had 43% (95% confidence interval (CI): 62-14%) lower total sperm count and 38% (95% CI: 58-10%) lower sperm concentration than men in the lowest third (P(trend) = 0.01). This association was driven by intake of saturated fats. Levels of saturated fatty acids in sperm were also negatively related to sperm concentration (r= -0.53), but saturated fat intake was unrelated to sperm levels (r = 0.09). Higher intake of omega-3 polyunsaturated fats was related to a more favorable sperm morphology. Men in the highest third of omega-3 fatty acids had 1.9% (0.4-3.5%) higher normal morphology than men in the lowest third (P(trend) = 0.02).

CONCLUSIONS: In this preliminary cross-sectional study, high intake of saturated fats was negatively related to sperm concentration whereas higher intake of omega-3 fats was positively related to sperm morphology. Further, studies with larger samples are now required to confirm these findings.

Andrology. 2015 May;3(3):450-61. doi: 10.1111/andr.12024. Epub 2015 May 7.

Dietary fatty acids affect semen quality: a review.

Esmaeili V[1], Shahverdi AH[1], Moghadasian MH[2], Alizadeh AR[1,3].

Author information

Abstract

Mammalian spermatozoa are characterized by a high proportion of polyunsaturated fatty acids (PUFA) which play a crucial role in fertilization. This review focuses on analysis of sperm fatty acid profiles and the effects of omega-3, saturated and trans dietary and sperm fatty acids on sperm parameters. Two major points have been pivotal points of investigation in the field of sperm fatty acid profiles: first, the comparison between fatty acid profiles of fertile and infertile men and second, the effect of dietary fatty acids on sperm fatty acid profiles as well as sperm quality and quantity. Docosahexaenoic acid (DHA, C22:6n-3), and palmitic acid (C16:0) are the predominant PUFA and saturated fatty acids, respectively, in human sperm cells. Higher levels of DHA are concentrated on the sperm's head or tail varying among different species. However, the human sperm head contains a higher concentration of DHA. Dietary fatty acids influence on sperm fatty acid profiles and it seems that sperm fatty acid profiles are most sensitive to dietary omega-3 PUFA. Although improvements in sperm parameters are a response to omega-3 sources after more than 4 weeks of supplementation in the male diet, time-dependent and dose-dependent responses may explain the failure in some experiments. In human spermatozoa, elevated saturated or trans fatty acid concentration and a low DHA level is a concern. The regulations of the sperm fatty acid mean melting point as well as expression regulation of peroxisome proliferator-activated receptor gamma (PPARG) alongside with spermatozoon assembly, anti-apoptosis effects, eicosanoid formation, and hormone activity are the putative key factors that induce a response by inclusion of omega-3 PUFA.

Clin Nutr. 2010 Feb;29(1):100-5. doi: 10.1016/j.clnu.2009.07.008. Epub 2009 Aug 8.

Relationship of omega-3 and omega-6 fatty acids with semen characteristics, and anti-oxidant status of seminal plasma: a comparison between fertile and infertile men.

Safarinejad MR[1], Hosseini SY, Dadkhah F, Asgari MA.

Author information

Abstract

BACKGROUND & AIMS: Fatty acid (FA) composition of the spermatozoa may be an important determinant of fertility. The aim was to evaluate polyunsaturated fatty acid (PUFA) composition of the blood plasma and spermatozoa in infertile men with idiopathic oligoasthenoteratozoospermia (OAT).

METHODS: Eighty-two infertile men with idiopathic OAT and seventy-eight fertile men defined according to semen concentration and proven fertility were enrolled in the study. The semen parameters were assessed according to World Health Organization criteria; three omega-3 fatty acids--alpha-linolenic acid (ALA), eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), and two omega-6 fatty acids--linoleic acid (LA) and arachidonic acid (AA) concentrations were measured in blood plasma and spermatozoa; and the seminal plasma enzymatic antioxidant levels of catalase, and superoxide dismutase (SOD) were also assessed.

RESULTS: Proven fertile men had higher blood and spermatozoa levels of omega-3 FAs compared with the infertile patients. The ratio of serum omega-6/omega-3 fatty acids was significantly higher in infertile (14.8+/-4.3) patients compared to fertile controls (6.3+/-2.2) (P=0.001). Additionally, levels of AA were higher and the omega-3 index (EPA+DHA) was lower in infertile subjects than in fertile controls (all P values<0.05). Infertile men had higher mean AA:DHA ratio and AA:EPA (6.4+/-2.9 and 12.0+/-4.9, respectively) than fertile men (3.3+/-1.8 and 6.7+/-2.6, respectively) (both P=0.001). A strong negative correlation was found between the AA:DHA and AA:EPA ratios and total sperm count (r=-0.62, P=0.001 and r=-0.64, P=0.001, respectively), sperm motility (r=-0.63, P=0.001 and r=-0.61, P=0.001, respectively), and sperm morphology (r=-0.61, P=0.001, and r=-0.59, P=0.002, respectively).

CONCLUSIONS: Infertile men had lower concentrations of omega-3 FAs in spermatozoa than fertile men. These results suggest that research should be performed to assess the potential benefits of omega-3 FA supplementation as a therapeutic approach in infertile men with idiopathic OAT.

ARGININE L CARNITINE - ACETYL CARNITINE

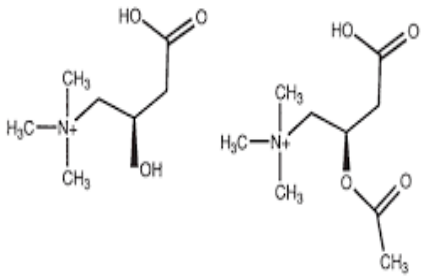


Figure 1 Chemical structures of carnitine and acetyl-l-Carnitine

Précurseur du NO qui est nécessaire pour une bonne mobilité
Précurseur de spermine et spermidine qui jouent un rôle dans la motilité
Effet plus marqué sur les oligo spermie moyennes.
APPORT 2-4 gr

Présente dans le sperme à haute concentration. Se transforme en Acetyl carnitine active. Accrois la motilité, parfois numération et forme normale
APPORT 3 gr

L-carnitine levels in the seminal plasma of fertile and infertile men: correlation with sperm quality.

Matalliotakis I, Koumantaki Y, Evageliou A, Matalliotakis G, Goumenou A, Koumantakis E.
Department of Obstetrics and Gynecology, University Hospital, Heraklion, Crete, Greece.
Int J Fertil Womens Med. 2000 May-Jun;45(3):236-40.

OBJECTIVE: To confirm the presence of L-carnitine in human seminal plasma, to show differences between L-carnitine concentrations in fertile and infertile subjects, and to show potential relationships between L-carnitine and semen quality. STUDY DESIGN: Seminal plasma from 101 men obtained by masturbation was examined for the presence of L-carnitine. Semen samples were divided as follows: (a) in eight groups according to the etiology of fertility, (b) in two groups on the basis of normal or abnormal spermiogram, (c) correlation of the amount of L-carnitine in seminal plasma with values of the spermiogram. RESULTS: We found the following: (1) L-carnitine levels differ significantly between controls and the patient groups (P < .0001) (2) The group with normal spermiogram has a mean value for L-carnitine of 478.4 while the abnormal one comes to 100.58. This difference is statistically significant (P < .0001). (3) There is a statistically significant, positive correlation between L-carnitine and the number of spermatozoa, the percentage of motile spermatozoa, and the percentage of normal forms (P < .0001). CONCLUSION: These findings suggest that determination of seminal carnitine values might provide the physician with an additional means of evaluating the infertile male.

Clin Chim Acta. 2007 Mar;378(1-2):159-63. Epub 2006 Nov 24.

Determination of free L-carnitine in human seminal plasma by high performance liquid chromatography with pre-column ultraviolet derivatization and its clinical application in male infertility.

Li K[1], Li W, Huang Y.

Author information

Abstract

BACKGROUND: To develop and validate a simple and reliable high performance liquid chromatographic (HPLC) method for the analysis of free L-carnitine in human seminal plasma and to investigate its clinical significance as a potentially additional means of evaluating the infertile male.

METHODS: After proteins in seminal plasma are precipitated with a mixture of acetonitrile and methanol (9:1; v/v), free L-carnitine in seminal plasma was derivatized to form its UV-absorbing ester. HPLC separation of the sample solution was performed on a Lichrospher SiO2 column and detected by ultraviolet absorbance at 260 nm. A mobile phase composed of acetonitrile-citric acid buffer (containing 12 mmol/L triethanolamine, pH 5.0) was found to be the most suitable for this separation at a flow rate of 1.2 mL/min and enabled the baseline separation of the free L-carnitine from interferences with isocratic elution. The free L-carnitine levels in seminal plasma were studied in both 30 control subjects and 87 patients with infertility. Ejaculates were classified into studied subgroups and defined as: asthenozoospermia (n=29), oligozoospermia (n=19) and oligoasthenoteratozoospermia (n=39).

RESULTS: Under the chromatographic conditions described, the free L-carnitine derivative had a retention time of approximately 13 min. Good separation and detectability of free L-carnitine in human seminal plasma sample were obtained. The method proved to be linear in the range of L-carnitine from 0 micromol/L to 1000 micromol/L. The relative standard deviations of within- and between-assay for free L-carnitine analysis were 1.23 and 1.36 %, respectively. The recoveries were 91.6-96.5% for the human seminal plasma samples. Free L-carnitine concentrations in the populations were 392.66+/-107.18 micromol/L in the fertile group (n=30), 270.00+/-83.92 micromol/L in asthenozoospermia group, 187.97+/-43.90 micromol/L in oligozoospermia group and 175.65+/-67.07 micromol/L in oligoasthenozoospermia group. The large difference ($P<0.01$) between the fertile and infertile populations is evident and the difference between the subdivided groups in the infertile group is not significant ($P>0.05$).

CONCLUSION: The determination of free L-carnitine level in seminal plasma may prove useful as a potentially biochemical marker of fertility and this is a useful guidance for the clinic therapy and the mechanismic study on the male reproduction.

MAIS AUSSI

- LYCOPENE antioxydant au niveau du liquide séminal
- ASTAXANTHINE antioxydant
- PYCNOGENOL inhibiteur cyclo oxygénase
- MACA numération et morphologie
- LIGNANS diminue 16 OH / 2OH œstrogènes et libère SERTOLI
- QUERCETINE
- TAURINE
- FIGUIER DE BARBARIE
- HYPOTHYROIDIE SUB CLINIQUE DOIT TOUJOURS ETRE
- RECHERCHE

Med J Islam Repub Iran. 2013 Nov;27(4):204-9.

The association between dietary antioxidant intake and semen quality in infertile men.

Nadjarzadeh A[1], Mehrsai A[2], Mostafavi E[3], Gohari MR[4], Shidfar F[5].

Author information

Abstract

BACKGROUND: Oxidative stress is detrimental to semen quality and has a significant role in the etiology of malesubfertility.

METHODS: Dietary intake of antioxidants were compared between thirty two men with oligolastheno/ teratazoospermic(cases) and 32 normospermic volunteers (controls) attending fertility clinic in Mirza Koochak-khanHospital in Tehran, Iran. All participants were nonsmokers and matched according their age and Body MassIndex (BMI). Nutrient consumption was calculated using a semi- quantitative food frequency questionnaire.Semen samples were collected and were assessed by measuring volume, concentration, motility and morphology.

RESULTS: infertile subjects had a significantly lower intake of zinc and folate compare to control ones($p<0.001$). Dietary intake of vitamin C and E was lower than recommended values in 59.4% of case group thatwas significantly different from control ones ($p<0.05$). In control group, 36.4 and 40.9% of participants had insufficientdietary intake of vitamin C and E, respectively. Significant correlations were found between folate($r=0.5$, $p<0.001$), zinc ($r=0.6$, $p<0.001$) and percentage of motility and also between vitamin E and morphology($r=0.3$, $p=0.03$), zinc and concentration ($r=0.4$, $p=0.004$) in all participants.

CONCLUSION: summary, a low intake of folate, zinc, and vitamin E were related to poor sperm concentrationand motility.

Hum Fertil (Camb). 2015 Jun 19:1-5. [Epub ahead of print]

Oral antioxidant treatment partly improves integrity of human sperm DNA in infertile grade I varicocele patients.

Gual-Frau J[1], Abad C, Amengual MJ, Hannaoui N, Checa MA, Ribas-Maynou J, Lozano I, Nikolaou A, Benet J, García-Peiró A, Prats J.

Author information

Abstract

Infertile males with varicocele have the highest percentage of sperm cells with damaged DNA, compared to other infertile groups. Antioxidant treatment is known to enhance the integrity of sperm DNA; however, there are no data on the effects in varicocele patients. We thus investigated the potential benefits of antioxidant treatment specifically in grade I varicocele males. Twenty infertile patients with grade I varicocele were given multivitamins (1500 mg L-Carnitine, 60 mg vitamin C, 20 mg coenzyme Q10, 10 mg vitamin E, 200 µg vitamin B9, 1 µg vitamin B12, 10 mg zinc, 50 µg selenium) daily for three months. Semen parameters including total sperm count, concentration, progressive motility, vitality, and morphology were determined before and after treatment. In addition, sperm DNA fragmentation and the amount of highly degraded sperm cells were analyzed by Sperm Chromatin Dispersion. After treatment, patients showed an average relative reduction of 22.1% in sperm DNA fragmentation ($p = 0.02$) and had 31.3% fewer highly degraded sperm cells ($p = 0.07$). Total numbers of sperm cells were increased ($p = 0.04$), but other semen parameters were unaffected. These data suggest that sperm DNA integrity in grade I varicocele patients may be improved by oral antioxidant treatment.

J Clin Diagn Res. 2013 Jun;7(6):991-5. doi: 10.7860/JCDR/2013/4974.3040. Epub 2013 Jun 1.

The total antioxidant power of semen and its correlation with the fertility potential of human male subjects.

Pahune PP[1], Choudhari AR, Muley PA.

Author information

Abstract

BACKGROUND: There are growing evidences that the damage which is caused to the spermatozoa by the Reactive Oxygen Species (ROS) plays a key role in the male infertility. The seminal plasma is endowed with many enzymatic and nonenzymatic antioxidants which protect the spermatozoa against oxidative stress.The present study was undertaken by using a simple, colourimetric, ferric reducing, antioxidant power for assessing the total antioxidant power rather than the individual antioxidants. The measurement of the individual antioxidants in the seminal plasma, such as Superoxide Dismutase, Vitamin E, etc. is time consuming, which often requires sophisticated and expensive techniques and these measurements may not correlate with the quality of semen.

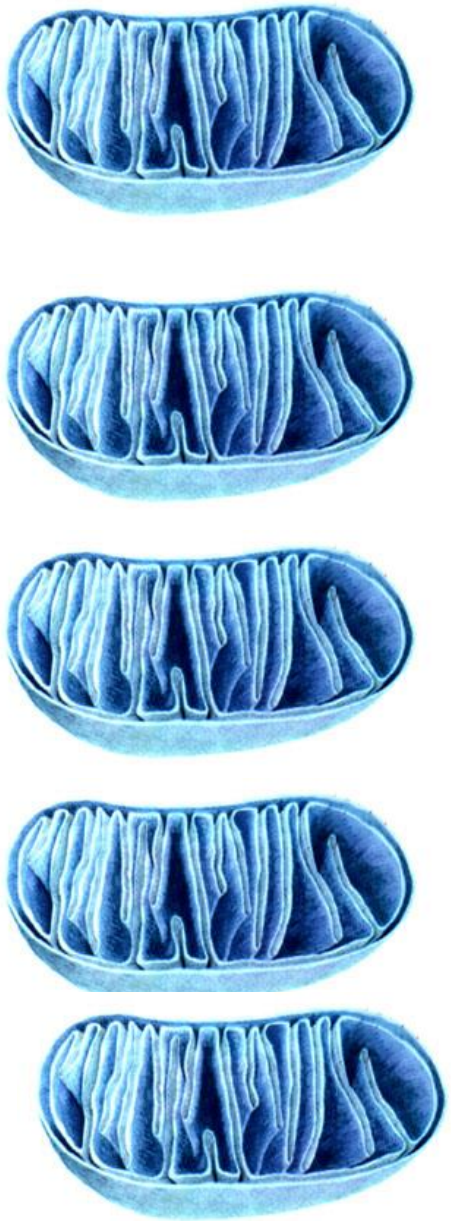
AIM: To evaluate the total antioxidant capacity of seminal plasma by estimating the Ferric Reducing Antioxidant Power (FRAP) of semen in different groups of subjects and to correlate it with the different seminogram parameters.

MATERIAL AND METHODS: The semen samples were obtained from 150 male partners of infertile couples who attended the Reproductive Biology Unit (Infertility Clinic) of the Department of Physiology, MGIMS, Sevagram, who were aged 20-58 years and they were analyzed for the routine seminogram parameters. All the subjects were categorized into two main groups, A. The subjects with abnormal ejaculates, who were further sub classified into the following groups i) Asthenoteratozoospermics (n=25) ii) Oligoasthenoteratozoospermics (n=26) and iii) Azoospermics (n=19) and B. The subjects with normal ejaculates (n=80). The total antioxidant power was measured spectrophotometrically by using the Ferric Reducing Antioxidant Power (FRAP) assay.

RESULTS: The Total Antioxidant Capacity (TAC) was found to be significantly lower in the abnormal ejaculates than in the normal ejaculates. A statistically significant positive correlation was observed between the TAC and all the seminogram parameters such as the sperm concentration, sperm motility and sperm morphology ($p<0.05$).

CONCLUSION: A decreased seminal plasma antioxidant capacity (TAC) could have significant role in the aetiology of impaired sperm functions. So, the tac may be used as specific biomarker for assessing the oxidative stress in sperms.

Mictronutrients Mitochondriaux



- Vitamine A
- Vitamines B1, B2, B3, B5
- Vitamine E (sperme)
- Vitamine C (sperme)
- Acides Gras Oméga-3 et -6 (sperme)
- Fer
- Sélénium (sperme)
- Zinc (sperme)
- Cuivre
- Acid alpha lipoïque (sperme)
- L-Carnitine (sperme)
- Coenzyme-Q10 (sperme)
- Glutathion Réduit (sperme)

Int J Biochem Cell Biol. 2014 Oct;55:60-4. doi: 10.1016/j.biocel.2014.08.011. Epub 2014 Aug 21.

Mitochondria: participation to infertility as source of energy and cause of senescence.

Benkhalifa M[1], Ferreira YJ[2], Chahine H[3], Louanjli N[4], Miron P[2], Merviel P[5], Copin H[5].

Author information

Abstract

Mitochondria is a powerhouse organelle involved in ATP synthesis, calcium signaling, reactive oxygen species (ROS) by oxidative stress production, cell cycle arrest via apoptosis and sex steroid hormones biosynthesis. Improvement of sperm parameters such as motility, capacitation, acrosome reaction, and oocyte interaction, involve regulation of ROS levels by the mitochondria. In human, the relation between the quantitative level of mitochondrial DNA (mtDNA), oocyte cytoplasm maturation and fertilization potential, is not clear. It has been hypothesized that oocytes without sufficient wild type mtDNA and therefore able to generate ATP, would not normally be ovulated. This is reflected in the low numbers of mtDNA observed in degenerate oocytes obtained through super ovulation protocols during assisted reproductive technology programs. Different theories place mitochondria in a central role of oxidative damage to cells and tissues related to infertility declining and aging. Mitochondria-dependent apoptosis seems to be responsible for the pre and post-natal decline in germ cells, embryo development, implantation failure, and miscarriages.

DG News Obstetrics/Gynaecology

February 29, 2020

Antioxidant Supplements Do Not Improve Male Fertility

Antioxidant supplements do not improve semen quality among men with infertility, according to a study published in *Fertility and Sterility*.

The study also found that antioxidant supplements likely do not improve pregnancy and live birth rates.

The multicentre Males, Antioxidants, and Infertility Trial (MOXI) included 171 couples where the male partner had at least 1 abnormal reading on an analysis evaluating sperm concentration, mobility, shape, and DNA quality; the female partners had normal fertility test results. Males were randomised to receive an antioxidant formulation (n = 85) containing vitamin C 500 mg, vitamin E 400 mg, selenium 0.20 mg, l-carnitine 1,000 mg, zine 20 mg, folic acid 1,000 mcg, and lycopene 10 mg, or placebo (n = 86).

- Beaucoup de résultats concernent des études de qualités variables mais il existe de plus en plus d'évidences sur le rôle de la protection antioxydante sur la qualité du sperme et le taux de fécondation

- Des études cliniques contrôlées sont très difficiles en raison des variations spontanés du spermogramme, du non parallélisme avec la fertilité, de la durée de la spermatogenèse (70 j)
- La plupart des études sont animales ou in vitro sans enlever de leur valeur
- On met par ailleurs en avant l'effet synergique de plusieurs antioxydants (et souvent pas les mêmes) ce qui rend l'interprétation encore plus difficile
- Une complémentation multiple semble préférable et sans doute à dose moindre. Mais un déficit identifié doit être complémenté à dose thérapeutique
- Il parait évident que l'action antioxydative doit être bénéfique pour prévenir l'oxydation de l'ADN du spermatozoïde Pourtant il n'existe pas de corrélation entre le taux de fécondation et le taux de fragmentation du DNA
- Par contre la qualité embryonnaire (blastocyste) serait impacté (taux de fausse couche)
- On parle de plus en plus d'un grand domaine encore peu connu, celui de l'épigénetique ou le mode de vie l'apport nutritionnel et micronutritionnel pourrait influencer le développement du fœtus durant la grossesse et même la santé post natale .
- Une étude montre la relation entre alimentation du père en graisse saturée et diabète et obésité chez les enfants.
- Cette nouvelle réalité doit nous faire prendre conscience que la prise en charge d'un couple doit être préconceptionnelle et commencer au moins 3 mois avant le désir de grossesse.

Tableau Fertilité Homme

	PROXEED PLUS	GAMETIX M	FERTILITY MAN	CONDENS YL	OLIGOBS M	ANDROBIA NE	FERTILOVI T	FERTIMAX	BIO PROTECT	ARGININE IL CARNITINE	OMEGAZO L
ZINC	10 mg	10 mg	3,75 mg	12,5 mg	15 mg	5 mg	25 mg	15 mg	X		
SELENIUM	50 mcg	50 mcg			27,5 mcg	27,5 mcg	100 mcg	50 mcg	X		
CoQ10	20mg	20 mg			30 mg	30 mg	15 mg	40 mg	X		
Vit B 12	1,5 mcg		0,75 mg	2,4 mg		1,25 mg					
B 9	200 mcg	200 mcg	100 mcg	400 mcg	200 mcg	100 mcg	500 mcg	200 mcg			
L Carnitine	1,725 g	2000 mg			3000 mg	1000 mg		400 mcg		X	
Acetyl Carnitine	500 mg		50 mg			500 mg	50 mg			X	
Fructose	1 g				90 mg						
Vit C	90 mg	180 mg					100 mg	180 mg	X		
TAURINE		250 mg			100 mg				X		
Vit E		12 mg	5 mg	12 mg	15 mg		100 mg	30 mg	X		
Vit B 3		16 mg		16 mg							
Vit B 6		1,4 mg	1,5 mg	1,4 mg		0,7 mg					
PIN MARITIME			50 mg								
ASTAXANTHINE			4 mg								
L CYSTEINE				170 mg					X		
Figier de barbarie				100 mg							
Qurcetine									X		
Vit B 2			1,4 mg	1,4 mg							
graine de lin			1000 mg								X
ARGININE					100 mg					X	
DHA					200 mg						X

TRAITEMENT ADJUVANT

Peptides testicules

prostate

Antioxydant complex

omega3

carnitine

ASHWAGANDHA

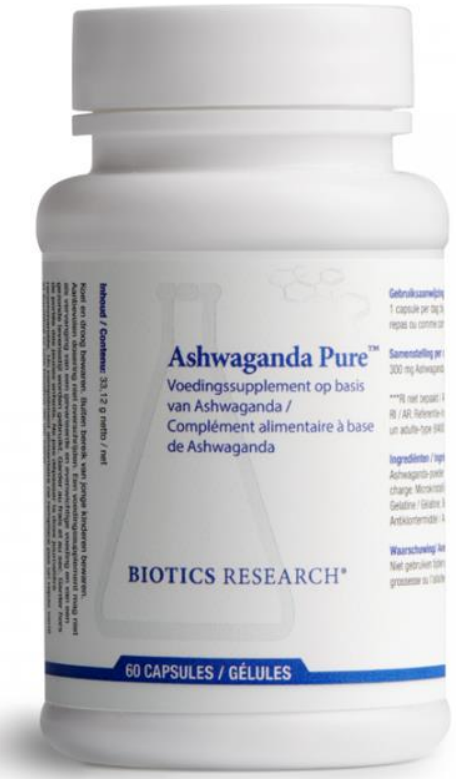
FERTILITY STERILITY (2010 Aug;94(3):989-96)
75 Hommes prise de sang + sperme
Inhibe peroxydation des lipides et carbonylation des protéines
Améliore Numération et mobilité
Augmente Vit A C E
Augmente Testostérone de 15%

REPRODUCTIVE BIOMEDECINE ON LINE 25 Hommes
Réduction apoptose et stress oxydatif
Diminution des métaux lourds

ETUDE PILOTE MUNBAI 46 Hommes
Augmentation 167% Numération 57% Mobilité 17% taux de Testostérone

DOSE : 4 gramme poudre ou 1 gramme concentré

2 X 2 cp / J



CAS CLINIQUE

- COUPLE : désir de grossesse depuis 18 mois
- Bilan féminin normal : sang + hormonal + echo + HSG (Vit D)
- Bilan masculin : sang + hormonal normal (Vit D)
- Spermogramme Vol: 2,3ml - Num: 18M/ml - Mob 35%
- Progressive: 18% - FN: 7%
- OLIGOASTHENOSPERMIE
- Traitement par complexe antioxydant 3-4 mois avant d’envisager IAC
- RESULTAT: grossesse après 2 mois (HSG ?)

On Retient

- QUE TOUTES LES SITUATIONS QUI FAVORISENT LE METABOLISME MITOCHONDRIAL VONT AMELIORER LA QUALITE DE LA FECONDATION EN FOURNISSANT L'ENERGIE NECESSAIRE

- QUE TOUTES LES SITUATIONS QUI VONT FAVORISER UN BON EQUILIBRE DES ACIDES GRAS VONT AMELIORER LES MENBRANES PLASMIQUES ET LA FECONDATION

INFERTILITE FEMME

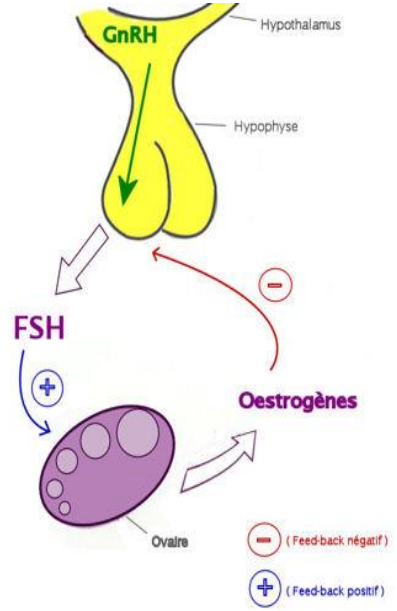
Consultation d'infertilité

- Anamnèse
  - ATCD
  - Sexualité
- Examen clinique
- Biologie nutritionnelle fonctionnelle et hormonale
- Echographie périovulatoire
- Hystérographie

OVULATION FONCTION TUBAIRE ENDOMETRE

BILAN HORMONAL au J3 du cycle

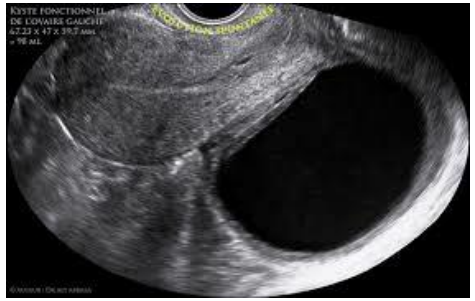
- FSH LH PROLACTINE
- DHEA
- Œstradiol
- Progestérone
- Testostérone androstandiol
- Androstanediol glucuronide
- SHBG
- Hormone anti-mullérienne
- TSH T3 T4 Ac Thyr

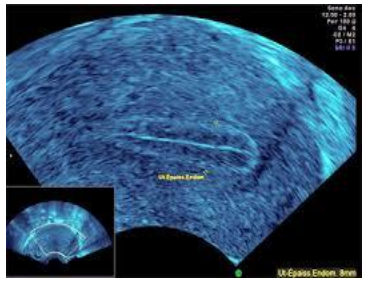


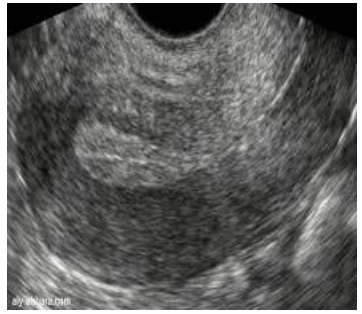
Bilan Nutritionnel

- Homa test
- Profil acides gras
- CRP ultrasensible
- Vitamine D
- Perméabilité intestinale
- Etat flore intestinale
- Nutriments mitochondriaux
- Exercice physique régulier

ECHOGRAPHIE PRE OVULATOIRE

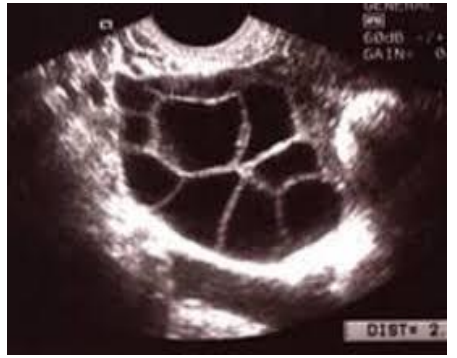


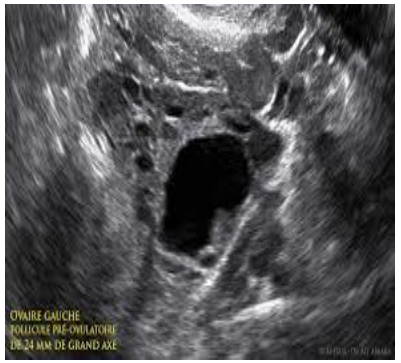




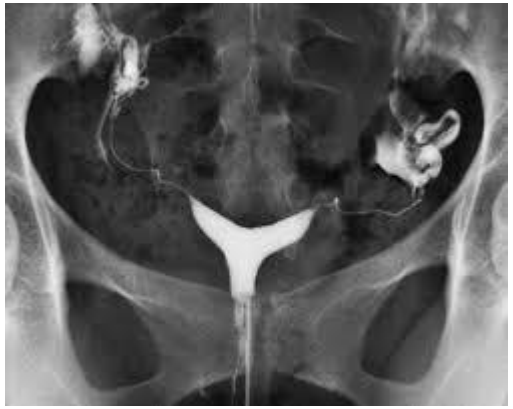
ECHO PERMET DE VERIFIER OVULATION ET CROISSANCE ENDOMETRIALE

SINON TEST OVULATION ET PROGESTERONE J 22-23



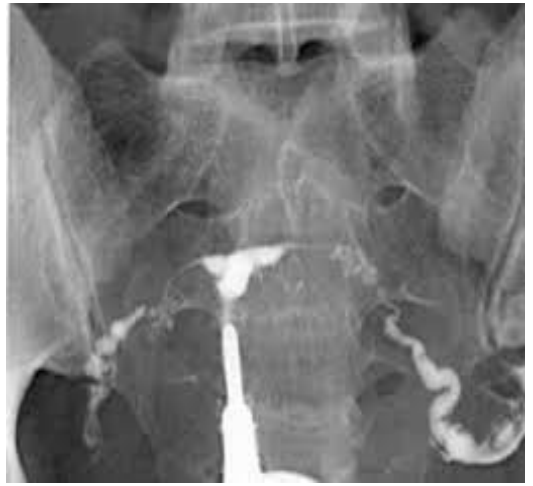


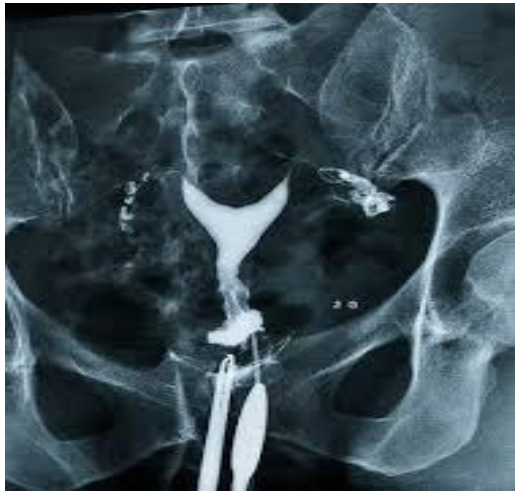
HYSTEROGRAPHIE

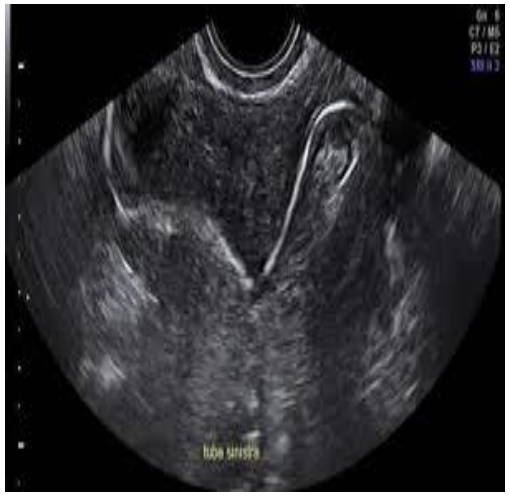


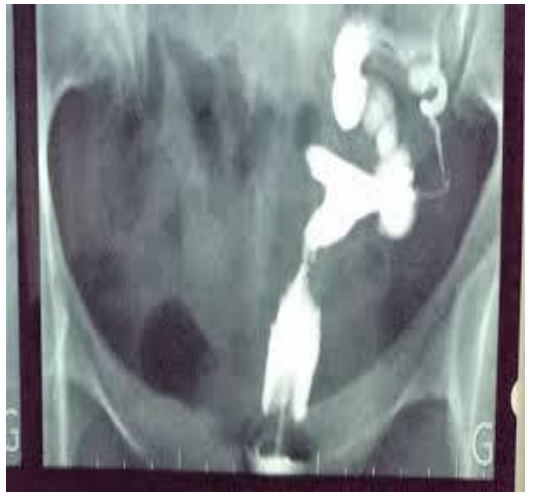
ANALYSE LA CAVITE UTERINE
LA PERMEABILITE
LA QUALITE MUQUEUSE TUBAIRE
NON VU A L'INJECTION DE MOUSSE

LIQUIDE DE CONTRASTE (ULTRAVIST)









INFERTILITE FEMME ALIMENTATION

ELIMINER:

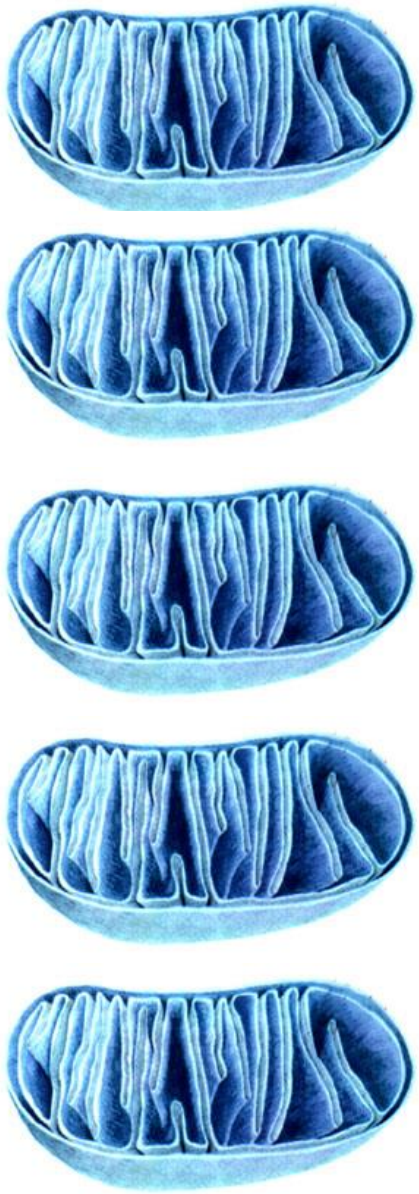
- Caféine Théine
- Boisson sucré
- Produits laitiers
- Acides gras trans
- Alcool
- Gluten

POIDS: en dessous de 80% et au dessus de 120% du poids idéal
augmente 2 à 4 fois le risque d'infertilité (BMI>30< 20)

INFERTILITE FEMME MICRONUTRITION

- ZINC (40 mg) chez l'animal déplétion augmente les ovocytes dégénérés
- excès et néfaste également
- VIT C (500mg): en supplémentation au CLOMID améliore la réponse folliculaire et la phase lutéale
- FER (35 mg): en association avec Vit C avec ferritin basse restaure la fertilité
- SELENIUM (100mcg): la déplétion favorise l'infertilité et les fausses couches
- ACIDE FOLIQUE (5 mg)+ VIT B12 (25 mcg): favorise la grossesse
- CUIVRE 2mg : déficit fréquent en cas d'infertilité

Mictronutrients Mitoschondriaux Equi-Fem (+)



Vitamine A +

Vitamines B1, B2, B3, B5 +

Vitamine E +

Vitamine C +

Acides Gras Oméga-3 et -6

Fer +

Sélénium +

Zinc +

Cuivre +

Acid alpha lipoïque

L-Carnitine

Coenzyme-Q10 +

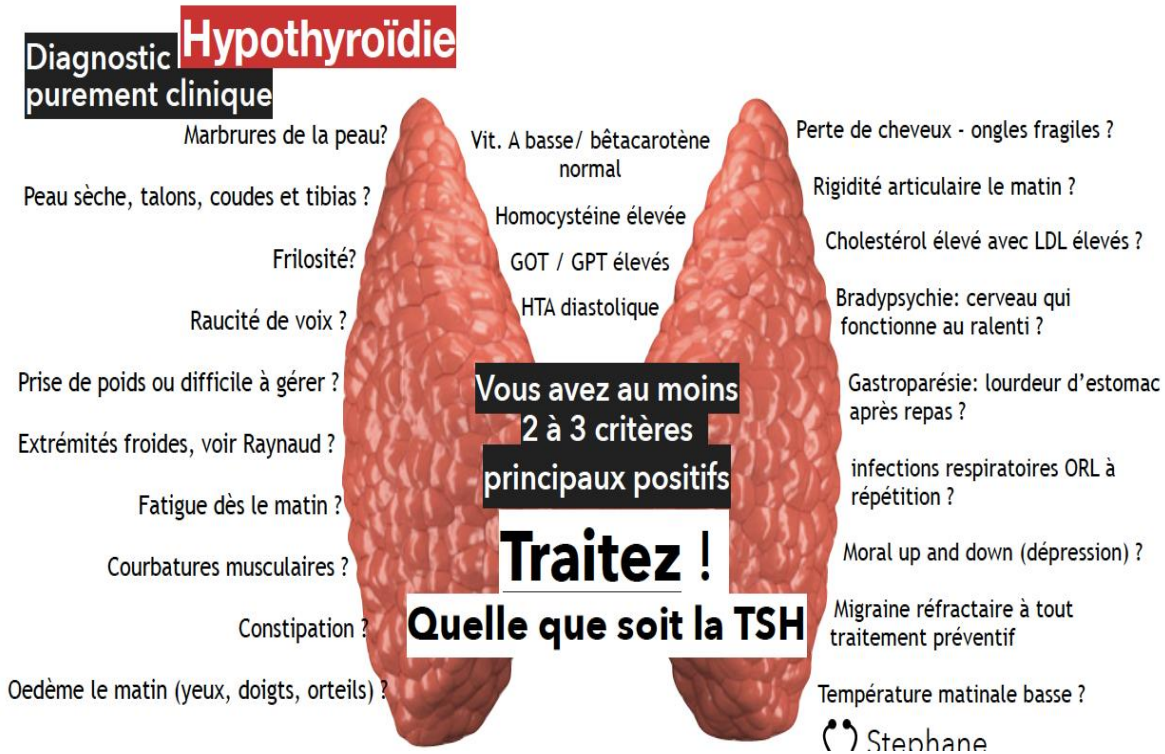
Glutathion Réduit

Tableau Fertilité Femme

	PROXEED W	FERTILITY W	GAMETIX F	OLIGOBS F	EQUI FEM	OMEGAZOL	ARGININE CARNITINE
ZINC	5 mg	3,75 mg	10 mg	15 mg	X		
SELENIUM	27,5 mcg		50 mcg	50 mcg	X		
CUIVRE	0,5 mg			0,5 mg	X		
FER	7 mg				X		
Co Q10		12,5 mg			X		
Vit D	5 mcg				X		
Vit E	30 mg	5 mg	30 mg	15 mg	X		
Vit C	90 mg		180 mg	120 mg	X		
Vit B 12	2,5 mcg	0,75 mcg	2,5mcg	3 mcg	X		
VitB 9	200 mcg	100 mcg	400 mcg	400 mcg	X		
Vit B 5	6 mg		6 mg		X		
Vit B6	2 mg	1,5 mg	2 mg	2 mg	X		
Vit A	4,8 mg				X		
L Carnitine	500mg						
L Arginine	500 mg						X
Acetyl Carnitine	250 mg	50 mg					X
ASTAXANTHINE		4 mg					
PIN Maritime		50 mg					
MACA		125 mg					
EPA+DHA		500 mg		300 mg		X	
MYO INOSITOL			2000 mg	200 mg	X		
IODE			150 mcg		X		
Vit B1 B2 B3 B8			100 %		X		
TAURINE				50 mg			

Thyroïde & Fertilité

Booster la fertilité féminine
en dehors de la PMA : les bons nutriments



Hypothyroïdie

- 42 femmes avec stérilité idiopathique sans signes évident d'hypothyroïdie sont traités par extrait thyroïdien en dose progressivement croissante en l'absence de grossesse.
- 10 femmes (23,8%) sont enceinte après 1 à 12 mois contre 3 (10,7%)
- Dans le groupe placebo
- Pour l'auteur 50% des patientes avec stérilité inexpliquée et des signes cliniques d'hypothyroïdie avec biologie normale sont tombées enceinte avec un traitement par extrait thyroïdien.

Hypothyroïdie & Infertilité

Booster la fertilité féminine
en dehors de la PMA : les bons nutriments

Hypothyroïde et signes cliniques
Perturbations des règles (diminution du volume et de la durée, saignements importants, absence de règles)
Absence d'ovulation
Diminution du nombre d'ovules
Mauvaise implantation
Fausses couches
Taux de naissances vivantes réduits

!! LA CLINIQUE PRIME SUR LA BIOLOGIE !!

Indian J Endocrinol Metab. 2015 Jul-Aug;19(4):504-6. doi: 10.4103/2230-8210.159058.

Prevalence of hypothyroidism in infertile women and evaluation of response of treatment for hypothyroidism on infertility.

Priya DM[1], Akhtar N[1], Ahmad J[2].

Author information

Abstract

AIMS AND OBJECTIVES: The aim was to study the prevalence of hypothyroidism in infertile women and evaluation of response of treatment for hypothyroidism on infertility.

MATERIALS AND METHODS: A total of 95 infertile women were investigated for thyroid stimulating hormone (TSH). Infertile women with clinical/subclinical hypothyroidism were given thyroxine ranges from 25 to 150 µg.

RESULTS: Of 95 infertile women, 53.7% were hypothyroid (TSH > 4.6 µIU/ml). After the treatment with thyroxine, 33.3% of subclinical hypothyroid women conceived within 6 weeks to 2-year period. The mean time to conception was 14.56 ± 4.83 months.

CONCLUSION: Thyroid profile should be done in infertility work up. Women with normal TSH levels who are positive for thyroid antibodies should also be treated with levothyroxine.

Hypothyroïdie subclinique et fertilité

Thyroid. 2014 Aug 2. [Epub ahead of print]

Maternal subclinical hypothyroidism, thyroid autoimmunity and the risk of miscarriage: a prospective cohort study.

Liu H[1], Shan Z, Li C, Mao J, Xie X, Wang W, Fan C, Wang H, Zhang H, Han C, Wang X, Liu X, Fan Y, Bao S, Teng W.

⊕ Author information

Abstract

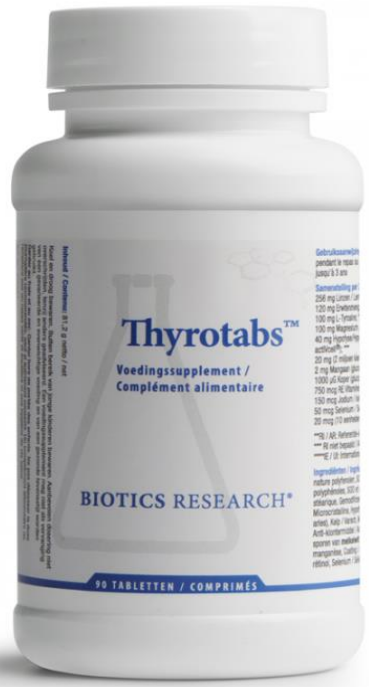
Background: Increasing data suggest that SCH and TAI are associated with adverse pregnancy outcomes, but there are limited data on the association of these conditions in early pregnancy with subsequent miscarriage. Methods: In this prospective cohort study, we screened 3315 women at low-risk for thyroid dysfunction at 4-8 weeks' gestation from iodine sufficient areas of China between January 2012 and September 2012. TSH, FT4 and autoantibodies [TPOAb and TgAb] were measured. Based on these results, women were divided into four groups for comparison: euthyroidism (ET), isolated subclinical hypothyroidism (SCH), isolated TAI (positive TPOAb or/and TgAb) and subclinical hypothyroidism with TAI (SCH + TAI). SCH group were stratified into two subgroups (SCH 1 and SCH 2) on the basis of the level of TSH (2.5≤TSH＜5.22 or 5.22≤TSH＜10, respectively), therefore SCH + TAI group were stratified into two subgroups (SCH + TAI 1 and SCH + TAI 2). The outcome of interest was miscarriage, defined as spontaneous pregnancy loss prior to 20 weeks. Results: Compared to women with ET, the risk of miscarriage was significantly higher among women with SCH 2 (7.1 versus 2.2%, aOR 3.40 (95% CI: 1.62 - 7.15; P = 0.002), isolated TAI (5.7 vs 2.2%, aOR 2.71, 95% CI 1.43-5.12; P = 0.003), SCH＋TAI 1 (10.0 vs 2.2%, aOR 4.96, 95% CI 2.76-8.90; P = 0.000), and SCH＋TAI 2 (15.2 vs 2.2%, aOR 9.56, 95% CI 3.76-24.28; P = 0.000). The gestational ages of 110 women at miscarriage were lower among women with subclinical thyroid abnormalities compared to ET (11.13 ± 3.21weeks with subclinical thyroid abnormalities vs. 9.33 ± 1.71 weeks with ET; P = 0.024). In parallel with the higher TSH levels, there were earlier gestation ages at miscarriage between subgroups of SCH and SCH+TAI [SCH 1 vs. SCH 2, (10.79±1.77) vs. (9.70 ± 1.47) weeks, P = 0.039 ; SCH+TAI 1 vs. SCH+TAI 2, (9.59 ± 1.97) vs. (8.88 ± 1.24) weeks, P = 0.031]. Conclusions: Women during 4-8 gestational weeks with SCH and TAI are at an increased risk of miscarriage. Women with a combination of SCH and TAI were here found to have the highest risk and earlier gestational ages of miscarriage.

Thyroïde & Fertilité

Booster la fertilité féminine
en dehors de la PMA : les bons nutriments

Hypothyroïdie par carences micronutritionelles

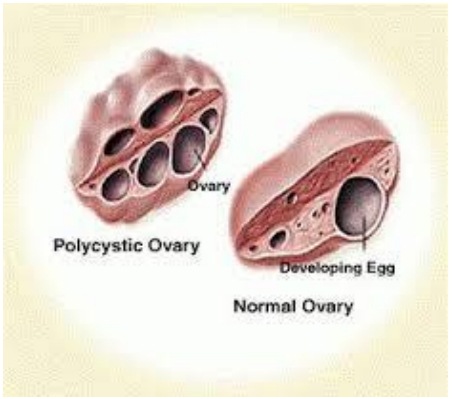
- **MAGNÉSIUM:** *carence: 90%, si stress ou transpiration abondante: 100%*
- **B12:** carence: 80%, si IPP ou végétalien: 100%
- **SÉLÉNIUM:** carence: 80 %
- **ZINC:** carence: 80-90 %
- **FERRITINE:** chute due à Dysbiose, règles abondantes: progestérone basse. ⛔ PAS de complémentation sans confirmation biologique
- **PROGESTÉRONE:** prédominance oestrogénique: syndrome prémenstruel.

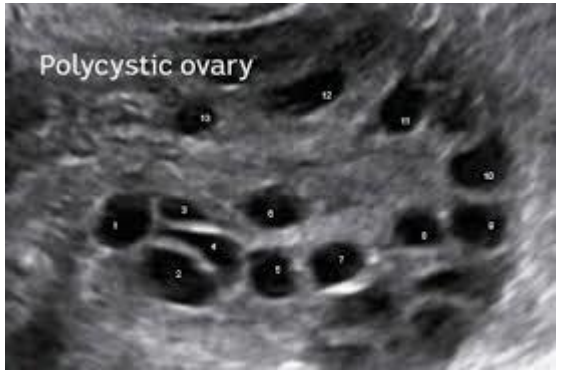


PCOS & Stein – Leventhal Syndrome

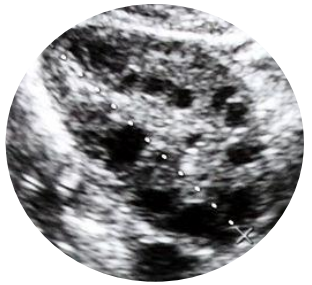
HYPERANDROGENIE
OBESITE ANDROIDE
CYCLES IRREGULIERS
OVAIRES POLYKYSTIQUES

SYNDROME METABOLIQUE
D'ORIGINE GENETIQUE
DE PENETRATION ET D'EXPRESSION
VARIABLE





Syndrome des Ovaires PolyMicroKystiques Diagnostic Paraclinique des SOMPK



- Taux élevés de LH inconstants (pulsatilité GnRH)
- FSH normale ou basse
  - (si taux normaux, ils sont probablement en dessous du seuil nécessaire à un développement folliculaire normal)
- Rapport LH/FSH élevé
- Chute de la SHBG (avec augmentation de la testostérone libre) témoin de l'hyperinsulinisme
- Résistance à l'insuline Test HOMA
- Echographie:
  - ovaires volumineux, kystiques
  - Multiples follicules immatures ≥ 10 follicules/ovaire de même taille hypertrophie du stroma

Syndrome des Ovaires PolyMicroKystiques MECANISMES

- Défaut de coordination dans la sécrétion ovarienne d'androgènes et d'oestrogènes (cellules de la granulosa)
- Réponse excessive des ovaires au LH (cellules de la thèque)
- Défaut inhérent aux cellules ovariennes

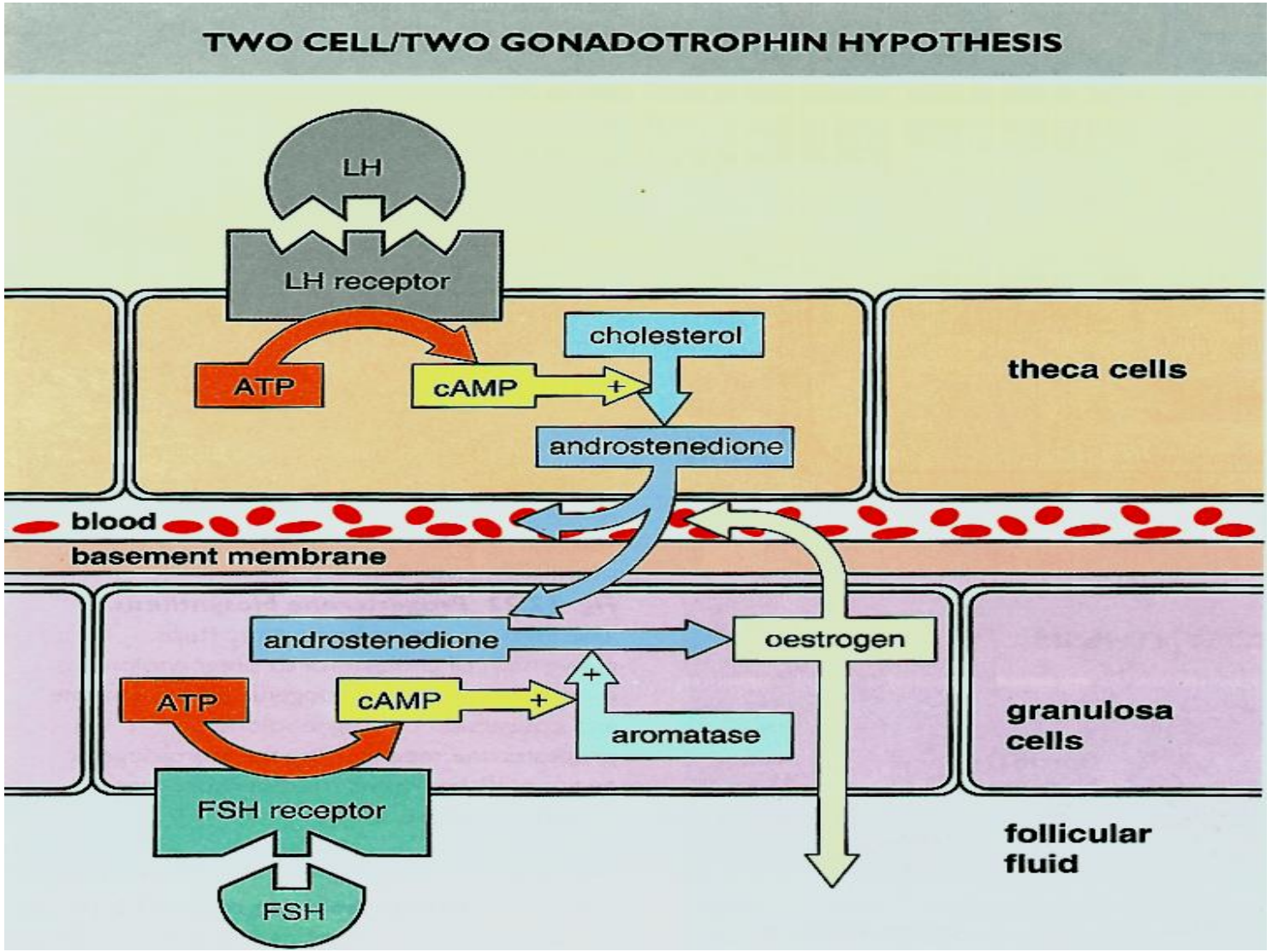


Schéma en couleur, annexe 40

TRAITEMENT NUTRITION

FAVORISER LEGUMES CRUCIFERES DIMINUE HYPEROESTROGENIE

FIBRES ET CEREALES POUR ELIMINER L'EXCES D'HORMONES AU NIVEAU DIGESTIF

MENTHE VERTE ET RACINE DE REGLISSE DIMINUE SENSIBILITE RECEPTEUR ANDROGENE

ELIMINER SUCRE RAPIDE + GLUTEN

PEU DE VIANDE POUR BAISSER LES ANDROGENES

TRAITEMENT MICRONUTRITION

RESISTANCE A L'INSULINE: CHROME

CANELLE

BERBERINE

BACOPA

INFLAMATION BAS GRADE VIT D ZINC GLUTAMINE

OMEGA 3

TRAITEMENT DYSBIOSE

Fertil Steril. 2014 May 10. pii: S0015-0282(14)00315-X. doi: 10.1016/j.fertnstert.2014.04.004. [Epub ahead of print]

Assessment of insulin resistance in lean women with polycystic ovary syndrome.

Morciano A[1], Romani F[2], Sagnella F[1], Scarinci E[1], Palla C[1], Moro F[1], Tropea A[1], Policola C[3], Della Casa S[3], Guido M[1], Lanzone A[1], Apa R[1].

⊕ Author information

Abstract

OBJECTIVE: To develop and validate a specific simple measure of insulin sensitivity using oral glucose tolerance test (OGTT) values for lean polycystic ovary syndrome (PCOS) women.

DESIGN: Retrospective study.

SETTING: Gynecologic Outpatient Clinic of University Hospital, affiliated with Unit of Gynecologic Endocrinology.

PATIENT(S): Totals of 201 lean and 198 overweight/obese (ov-ob) nondiabetic PCOS patients were retrospectively selected.

INTERVENTION(S): None.

MAIN OUTCOME MEASURE(S): All patients underwent OGTT, euglycemic-hyperinsulinemic clamp, and androgenic and biochemical assays. The predictive performance of each insulin resistance (IR) index was analyzed with the use of receiver operating characteristic (ROC) curves.

RESULT(S): Higher correlation coefficients with clamp studies were obtained with the Belfiore Area (R_S = 0.579) and the homeostasis-model assessment (HOMA)-M_{120} (R_S = -0.576) in lean PCOS patients and with the Sib (R_S = 0.697) in ov-ob PCOS patients. The best predictive index of IR in lean PCOS was a HOMA-M_{120} value of ≥12.8 or more (area under the ROC curve [AUC] 92.4%). In the ov-ob PCOS population, the best predictive performance was obtained by a Sib of ≤10.2 or less (AUC 85.7%).

CONCLUSION(S): IR should be assessed in all PCOS women, both lean and ov-ob subjects. The HOMA-M_{120} resulted as a very simple tool, validated specifically for the lean PCOS woman whose cardiometabolic impairment is more frequently misunderstood.

Iran J Basic Med Sci. 2014 Feb;17(2):123-7.

Hormonal and metabolic effects of polyunsaturated fatty acid (omega-3) on polycystic ovary syndrome induced rats under diet.

Ouladsahebmadarek E[1], Khaki A[2], Khanahmadi S[1], Ahmadi Ashtiani H[3], Paknejad P[1], Ayubi MR[2].

Author information

Abstract

Objective(s): PCOS (polycystic ovary syndrome) produces symptoms in approximately 5% to 10% of women of reproductive age (12-45 years old). It is thought to be one of the leading causes of female subfertility. This study aimed to confirm the role of nutrition containing omega-3 (polyunsaturated fatty acid) on control of experimental PCO induced by estradiol-valerat in rats. Materials and Methods: Wistar female rats (n=40) were allocated into control (n=10) and test groups (n= 30), test group was subdivided into 3 groups: G1, received omega-3 (240 mg/kg/orally/daily); G2 and G3 groups were induced PCO by single injection of estradiol-valerate (16 mg/kg/IM). Group 3 received omega-3 (240 mg/kg/orally/daily) and low carbohydrate feeding for 60 subsequent days; on sixtieth day 5 ml blood samples and ovarian tissues of all rats in the group were removed and prepared for biochemical and hormonal analysis. Results: Catalase, GPX (Glutathione peroxidase), SOD (Superoxide dismutase) in groups that received omega-3 showed higher levels, but MDA (malondialdehyde) level was significantly decreased ($P<0.05$) in comparison with other experimental groups. Ovarian weights in both experimental and control groups were similar ($P<0.05$). Level of serum FSH (follicle stimulating hormone) was decreased, but level of testosterone was significantly increased ($P<0.05$) in PCO group in comparison with control and omega-3 groups. Conclusion: Results revealed that administration of omega-3 plus lower carbohydrate food significantly controlled PCO syndrome and balanced FSH and testosterone.

J Obstet Gynaecol. 2013 Apr;33(3):289-91. doi: 10.3109/01443615.2012.751365.

Efficacy of omega-3 in the treatment of polycystic ovary syndrome.

Oner G[1], Muderris II.

Author information

Abstract

The purpose of this study was to evaluate the efficacy and safety of omega-3 in the treatment of polycystic ovary syndrome and to compare the clinical, hormonal, TNF-α and resistin levels in the patients treated with omega-3. A total of 45 non-obese PCOS women were studied. Women were treated with daily oral 1,500 mg of omega-3 for 6 months. Body mass index (BMI), hirsutism score, fasting glucose and insulin levels were noted for each case. Hirsutism was assessed at 6-month intervals using the Ferriman-Gallwey (F-G) scoring system. Hormonal, TNF-α and resistin levels at 6 months of therapy were compared with baseline values. BMI, F-G scoring, insulin and HOMA levels decreased significantly during treatment, but glucose levels did not change. In the hormonal profile, serum LH and testosterone levels decreased and sex hormone-binding globulin levels increased significantly after the 6 months of therapy. On the other hand, TNF-α levels showed a significant increase, whereas resistin levels showed no change. Omega-3 may be also effective in improving hirsutism and insulin resistance in patients with PCOS.

Nutrients. 2015 Jun 8;7(6):4555-4577.

Serum Vitamin D Levels and Polycystic Ovary syndrome: A Systematic Review and Meta-Analysis.

He C[1], Lin Z[2], Robb SW[3], Ezeamama AE[4].

⊕ **Author information**

Abstract

Vitamin D deficiency (VDD) is common in women with and without polycystic ovary syndrome (PCOS) and may be associated with metabolic and endocrine disorders in PCOS. The aim of this meta-analysis is to assess the associations of serum vitamin D levels with metabolic and endocrine dysregulations in women with PCOS, and to determine effects of vitamin D supplementation on metabolic and hormonal functions in PCOS patients. The literature search was undertaken through five databases until 16 January 2015 for both observational and experimental studies concerning relationships between vitamin D and PCOS. A total of 366 citations were identified, of which 30 were selected (n = 3182). We found that lower serum vitamin D levels were related to metabolic and hormonal disorders in women with PCOS. Specifically, PCOS patients with VDD were more likely to have dysglycemia (e.g., increased levels of fasting glucose and homeostatic model assessment-insulin resistance index (HOMA-IR)) compared to those without VDD. This meta-analysis found no evidence that vitamin D supplementation reduced or mitigated metabolic and hormonal dysregulations in PCOS. VDD may be a comorbid manifestation of PCOS or a minor pathway in PCOS associated metabolic and hormonal dysregulation. Future prospective observational studies and randomized controlled trials with repeated VDD assessment and better characterization of PCOS disease severity at enrollment are needed to clarify whether VDD is a co-determinant of hormonal and metabolic dysregulations in PCOS, represents a consequence of hormonal and metabolic dysregulations in PCOS or both.

Reproduction. 2015 May;149(5):R219-27. doi: 10.1530/REP-14-0435. Epub 2015 Jan 27.

Adipose tissue dysfunction, adipokines, and low-grade chronic inflammation in polycystic ovary syndrome.

Spritzer PM[1], Lecke SB[2], Satler F[3], Morsch DM[3].

⊕ **Author information**

Abstract

Polycystic ovary syndrome (PCOS), a complex condition that affects women of reproductive age, is characterized by ovulatory dysfunction and androgen excess. Women with PCOS present higher prevalence of obesity, central adiposity, and dyslipidemia, and face increased risk of type 2 diabetes. PCOS is closely linked to functional derangements in adipose tissue. Adipocytes seem to be prone to hypertrophy when exposed to androgen excess, as experienced by women with PCOS, and both adipose tissue hypertrophy and hyperandrogenism are related to insulin resistance. Hypertrophic adipocytes are more susceptible to inflammation, apoptosis, fibrosis, and release of free fatty acids. Disturbed secretion of adipokines may also impact the pathophysiology of PCOS through their influence on metabolism and on sex steroid secretion. Chronic low-grade inflammation in PCOS is also related to hyperandrogenism and to the hypertrophy of adipocytes, causing compression phenomena in the stromal vessels, leading to adipose tissue hypoperfusion and altered secretion of cytokines. Lifestyle changes are the first-line intervention for reducing metabolic risks in PCOS and the addition of an insulin-sensitizing drug might be required. Nevertheless, there is not sufficient evidence in favor of any specific pharmacologic therapies to directly oppose inflammation. Further studies are warranted to identify an adipokine that could serve as an indirect marker of adipocyte production in PCOS, representing a reliable sign of metabolic alteration in this syndrome.

J Pediatr Adolesc Gynecol. 2015 Apr;28(2):114-8. doi: 10.1016/j.jpag.2014.05.005. Epub 2014 May 21.

Gynecol Endocrinol. 2015 Jul 20:1-5. [Epub ahead of print]

Impact of elevated thyroid-stimulating hormone levels in polycystic ovary syndrome.

Trummer C[1], Schwetz V, Giuliani A, Obermayer-Pietsch B, Lerchbaum E.

Author information

Abstract

The objective of this study was to analyse the impact of elevated thyroid-stimulating hormone (TSH) levels on the metabolic and endocrine phenotype in 583 women with polycystic ovary syndrome (PCOS). Endocrine and metabolic parameters were measured in all patients and compared between women with and without elevated TSH levels. Of the 583 women with PCOS, 125 women (21.4%) had thyroid disturbances (thyroid replacement therapy: 109 women, subclinical hypothyroidism: 16 women). Patients with elevated TSH levels had significantly increased fasting insulin, area under the curve-insulin, homeostatic model assessment-insulin resistance, and total cholesterol (TC)/high-density lipoprotein cholesterol (HDL) ratio and lower free thyroxin, insulin sensitivity and HDL ($p < 0.05$ for all). Euthyroid PCOS women with thyroid hormone substitution showed significant differences in TSH, age, body mass index, HDL and systolic blood pressure compared to those without hormone replacement therapy ($p < 0.05$ for all). We conclude that hypothyroid disturbances and elevated TSH levels are common findings in PCOS, which are associated with an adverse metabolic profile. Therefore, women with diagnosed PCOS should be screened for thyroid dysfunction.

CONCLUSION: Supplementation with chromium to adolescents with PCOS is a promising treatment option.

TRAITEMENT SPECIFIQUE

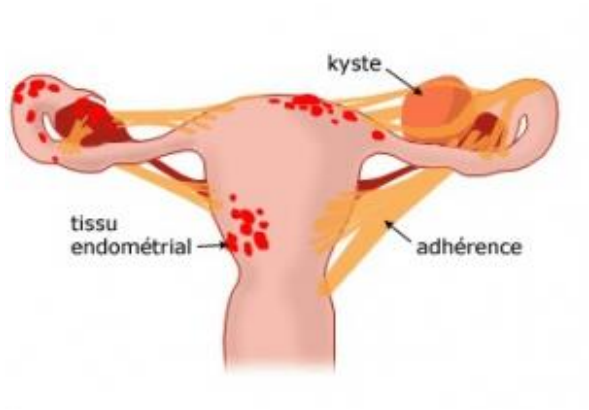
- MYOINOSITOL ovulation avec ou sans clomid
- METFORMINE TROGLITAZONE ovulation avec ou sans clomid
- THYROIDE obésité cholestérol ovulation
- OETROGENES ?
- PROGESTERONE phase progestative
- CLOMID ovulation
- ANTI ANDROGENES : ACETATE de CYPROTERONE, SPIRONOLACTONE, NIZORAL, FINASTERIDE

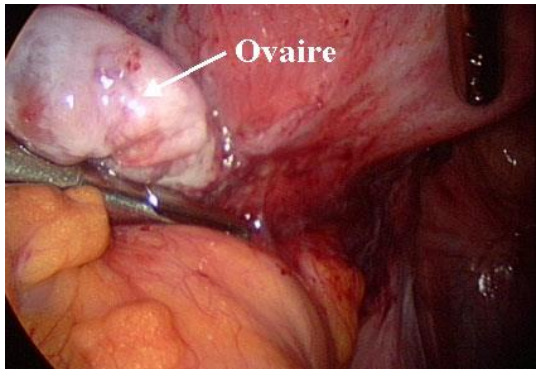
3X2 CP/J

CAS CLINIQUE

- OMPK: 29 ans, surpoids-obésité BMI 31
- Peau grasse, cheveux gras, acné bas du visage.
- Cycles irréguliers
- Troubles digestifs. Signes cliniques hypothyroïdie (TSH: 1,9)
- Echo ompk leger (5-6 foll)
- Biol: FH tonique (LH/FSH: 5/4) Testo nl, Androstedione +
- TRAITEMENT: Inositol (2gr) VitD (10000ui) Zinc (45 mg) Glutamine
- 2X1 gr) Berbérine (2x500mg) EUTHYRAL (½ cp)
- RESULTAT: Régularisation des cycles – Grossesse après 4 mois

Endometriose





- Cause fréquente d'infertilité chez des femmes « stérilité idiopathique », 50%
- Diagnostic = douleurs pelviennes ou sur une hystérographie montrant des images plus ou moins typiques (diverticules)
- Pas d'étiologie reconnue, (reflux, inflammation, immunité)
- Pas de relation entre l'importance des lésions et la pathologie .
- Pronostic différent entre endométriome, endométriose et adenomyose .
- L'hystérographie peut cependant être normale ce qui justifie la réalisation d'une coelioscopie chez toute femme présentant une infécondité inexpliquée.
- Foyers d'endométriose (grains bleutés) plus ou moins nombreux, dans le péritoine ou les ovaires.
- Sans étiologie reconnue mais rôle de l'inflammation et immunitaire très probable.

ENDOMETRIOSE

TRAITEMENT CLASSIQUE: supprimer les cycles, progestatifs.
chirurgie pour destruction des lésions
grossesse
fécondation in vitro

TRAITEMENT ALTERNATIF: inflammation, drainage , bilan fonctionnel.
Vit D
Curcuma
Omega 3
Glutamine
Zinc
Intestin

CAS CLINIQUE

- 33 ans, diagnostic endométriose par laparoscopie traité Laser, désir de G depuis 6 mois, stop contraception continu
- Douleurs pelviennes et dyspareunie profonde réapparue
- Bilan Hormonal normal, Fer - , Vit D -, Vit A-, Zn -, OMEGA 3 -, CRP nl
- Echo , HSG, normale

- Traitement : Vit D (10000ui) , EPA+DHA (2gr/j) Kapparest (3X1) anti-inflammatoire , IPS (3X1) muqueuse intestinale, Equifem (2X2)
- Résultat: diminution des douleurs pelviennes, grossesse avant PMA
- 7 mois plus tard

DHEA, Molécule de fertilité

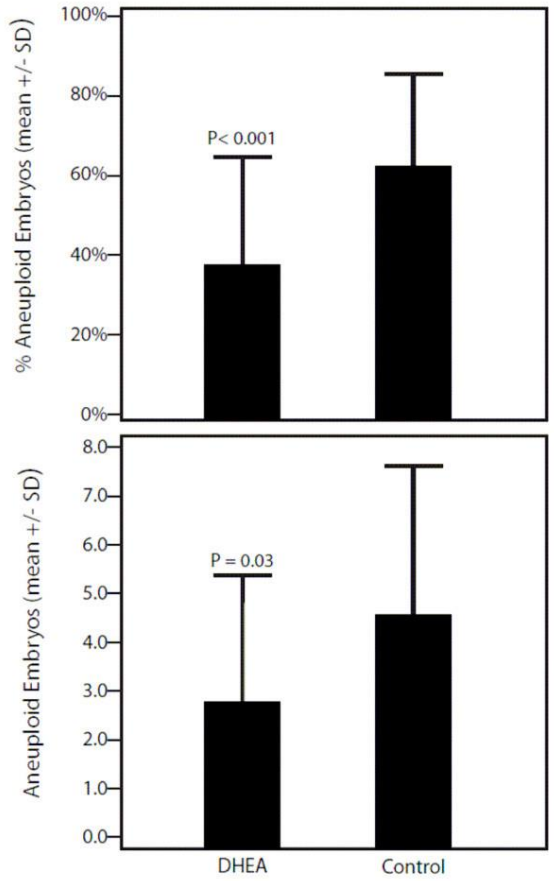
Avec l'âge, la production de DHEA diminue progressivement.

Biologie

- **DHEA** > 280 µg/dl

Rôles

- ✓ Favorise la procréation chez les femmes ayant des problèmes de fertilité[26].
- ✓ La DHEA améliore les chances de grossesse chez les femmes avec réserve ovarienne diminuée et réduit le taux de fausse couche de 50 à 80%[23, 24, 25]



La supplémentation en DHEA réduit le nombre d'aneuploïdie[22]

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www.figo.org

REVIEW ARTICLE

A meta-analysis of dehydroepiandrosterone supplementation among women with diminished ovarian reserve undergoing in vitro fertilization or intracytoplasmic sperm injection

Jie Li [a,1], Hua Yuan [a,1], Yang Chen [b,1], Hongbo Wu [a], Huimei Wu [a], Liuming Li [a,*]

DHEA **8 études (2 RCT)**

Outcome	Pooled RR (95% CI)	I^2, %	*P* value for heterogeneity
Implantation rate	1.89 (0.91–3.94)	0.00	0.40
Clinical pregnancy rate	2.13 (1.12–4.08)	50.90	0.06
Spontaneous abortion rate	1.09 (0.39–3.07)	0.00	0.74
Number of oocytes retrieved	−0.23 (−1.43 to 0.96)[a]	97.60	<0.001

- **Ovocytes n = 585 : *diminués***
- **Tx G clin n = 555 : Amélioré mais *NS si RCT et case-control***
- **Tx Implant n = 306 : *NS***
- **Tx FCS n = 281 : *NS***

Gluten & Fertilité

Cause largement méconnue aux conséquences...

Inflammation intestinale

→ Production de cytokines

➔ Bloque les récepteurs hormonaux

> aux oestrogènes et à la progestérone

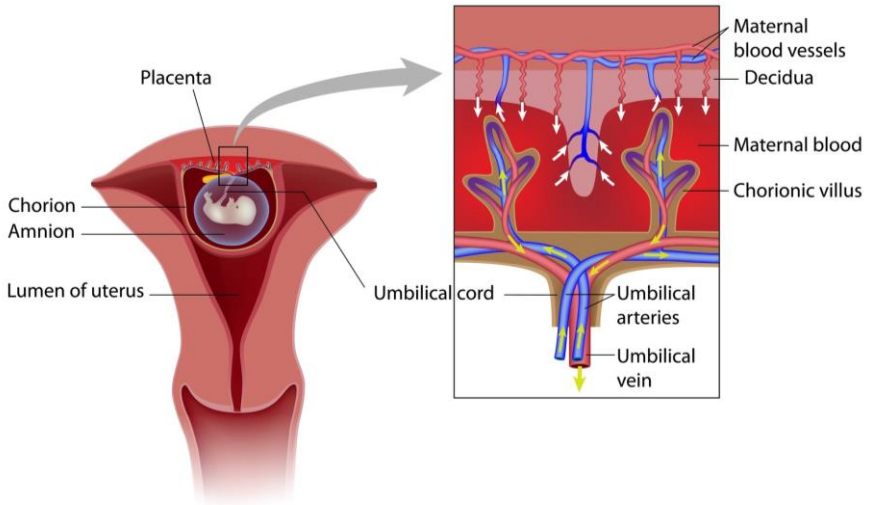
> à l'insuline > diabète type II

➔ Bloque les récepteurs aux neurotransmetteurs

> Dépression, Fatigue

> Troubles de l'attention

> Baisse de libido

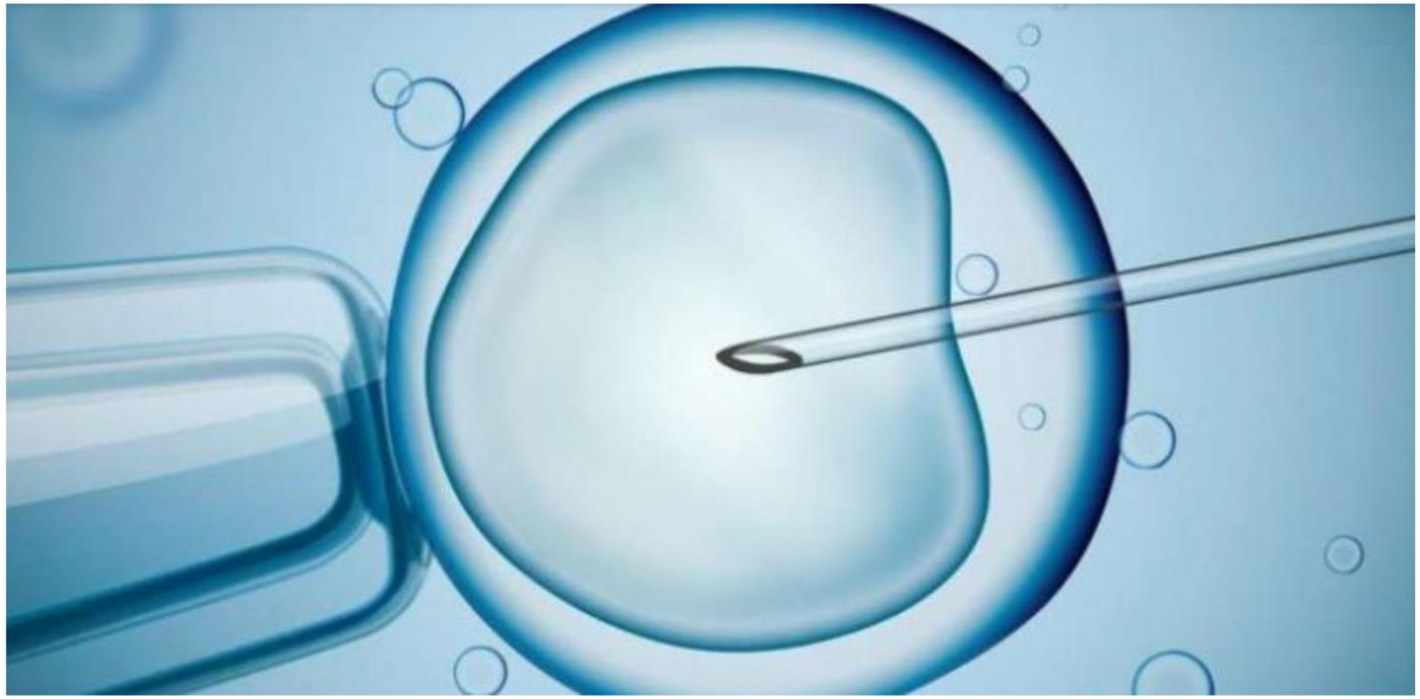


Mécanismes auto-immun

Bloque l'implantation et le dév. du placenta

Infertilité féminine : l'intolérance au gluten serait souvent en cause

25 septembre 2019 par Julien Venesson



Des chercheurs espagnols viennent de publier un travail d'analyse stupéfiant sur des dizaines d'études consacrées aux liens entre maladie cœliaque et infertilité féminine. Les résultats sont sans appel : une femme souffrant de problème de fertilité est trois fois plus susceptible d'être atteinte de maladie cœliaque [1].

L'intolérance au gluten : cause d'infertilité chez les femmes ?

L'intolérance au gluten ou maladie cœliaque toucherait 1% de la population. Des études ont montré que les femmes souffrant d'intolérance au gluten avaient un risque plus élevé d'être confrontées à des difficultés de procréation. Dans cette nouvelle étude parue dans la revue *Human Reproduction Update*, les auteurs ont effectué une analyse des études épidémiologiques réalisées sur l'association entre les deux évènements. Ils rapportent que les patientes ayant des problèmes de reproduction ont un risque plus élevé d'être diagnostiquées intolérantes au gluten que la population générale. Inversement, les patientes déjà diagnostiquées pour intolérance au gluten ont un risque plus élevé de fausses couches, retard de croissance intra-utérin et naissance prématurée.

J Reprod Med. 2011 May-Jun;56(5-6):199-203.

Increased prevalence of celiac disease in patients with unexplained infertility in the United States.

Choi JM[1], Lebwohl B, Wang J, Lee SK, Murray JA, Sauer MV, Green PH.

⊕ Author information

Abstract

OBJECTIVE: To determine whether there might be an increased prevalence of undiagnosed celiac disease among a population of infertile women using serologic screening.

STUDY DESIGN: A prospective cohort study was performed at an academic infertility clinic in the United States.

RESULTS: The overall prevalence of celiac disease in this population was 2.1% (4/188). There was a significantly increased prevalence (5.9%) of undiagnosed celiac disease among women presenting with unexplained infertility (n = 51).

CONCLUSION: Women with unexplained infertility are at increased risk for having undiagnosed celiac disease, which may be a potentially modifiable (and treatable) risk factor.

CONCLUSION

TOUS LES FACTEURS QUI VONT ETRE BENEFIQUES POUR LE SPERMATOZOIDE OU POUR L'OVULE ET DONC POUR LA FERTILITE ET LA GROSSESSE NE DIFFERENT EN RIEN DES PRINCIPES GENERAUX DE LA MEDECINE FONCTIONELLE. RETABLIR TOUS LES EQUILIBRES PHYSIOLOGIQUES AU NIVEAU OPTIMUM DE FACON INDIVIDUELLE ET PERSONALISE. L'ŒUF FECONDE EST UNE SEULE CELLULE QUI DOIT CONCENTRER LA POTENTIALITE D'UN ORGANISME ENTIER ET SUPPORTER UNE AUTONOMIE DE 5 JOURS AVEC UNE ACTIVITE METABOLIQUE ET MITOTIQUE EXPLOSIVE AVANT SON IMPLATATION.

A CETTE SEULE CONDITION ON OBTIENT PLUS DE FERTILITE (avant ou pendant PMA) MOINS DE FAUSSE COUCHE MOINS DE PATHOLOGIE OBSTETRICALE ET MEME POST NATALE.

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