Food Glorious Food
The Fertility Diet
30th October 2013

Dian Shepperson Mills
Cert.Ed., B.Sc. BA. Dip ION, MA
The Endometriosis and Fertility Clinic
Dian@endometriosis.co.uk
www.endometriosis.co.uk
www.makingbabies.com
Dian Shepperson Mills

- Director of The Endometriosis and Fertility Clinic
  www.endometriosis.co.uk
- Fellow of Royal Society of Medicine
- Trustee of Endometriosis SHE Trust UK
- American Society of Reproductive Medicine 1997-2013
  Chair of the Nutrition Special Interest Group
- ESHRE member 1999-2013
- BANT member MIL0109514
- Complementary and Natural Healthcare Council DoH
  Certified Nutritional Therapist CNHC 000265-C10
- Nutritional Therapy Council member NTC0403
- Governor and Fellow of Institute for Optimum Nutrition
Fertility With a Nutritional Approach

dian@endometriosis.co.uk
www.endometriosis.co.uk
www.makingbabies.com
Ralph Waldo Emerson

“The first wealth is health”

All that matters in life is that
You
Choose Food Wisely
Those Choices Matters to Quality of Life

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Food as Medicine
Eating we all do every day

You are what you eat, digest and absorb

Poor food choice can make you ill

Good food choice can make you healthy
How can diet impact the symptoms of sub-fertility?

Let food be your medicine!
Support your fertility

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Normal Fertility?

• “The Hutterites fertility, a Germanic farming community in the USA, is used as an example of how high fertility can be when a population is healthy, stable and not using contraception...producing 11 live births per married woman

• Their infertility rate was only 2.4 percent”


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Animal Husbandry

• Animals conceive on a rising body weight, not when weight is falling
• All animals have a fertility threshold
• In farming there still exists the practice of ‘flushing’. “The practice of giving ewes in fairly poor condition an improved diet for a few weeks before mating before they meet the ram”
• “Flushing means supplying all the essential nutrients to make the hypothalamus and pituitary gland and ovaries provide an excellent hormone profile” www.makingbabies.com

The placenta a whole new organ develops in the first month!

• “Far from being passive in its transport of molecules, the placenta is a highly metabolic organ producing sixty enzymes of its own”

• “The placenta gathers up maternally produced hormones, nutrients and forces them into the foetal bloodstream”

• “If the placental develops poorly, no matter how well the mother eats later, her unborn baby will not receive optimum nourishment”


• If the father’s sperm are inadequate the placenta will not develop properly. Research at Vandebilt University has shown. Miscarriage may follow
Healthy Babies Recipe

• Take healthy ova, sperm, womb lining
• Add fresh air, clean water, natural foods, nutrient absorption (vitamins, minerals cis-fatty acids, phyto-chemicals), relaxation and natural daylight.
• Avoiding anti-nutrients, pesticides, chemicals and plasticisers
• Mature ova and sperm for 3 months
• Gestate for 9 months at 37°C in a non-toxic environment

Dian Shepperson Mills, “Endometriosis: a key to healing and fertility through nutrition”. Thorsons p102, 2002
www.makingbabies.com
Unhealthy Babies?

- Food additives
- Xeno-oestrogens, pesticides, herbicides
- Harmful chemicals, phthalaytes, BPA
- Alcohol, caffeine, aspartame
- Street drugs, pharmaceuticals drugs
- Too little fresh fruit, vegetables, soluble fibre, omega 3 fish oils, proteins
- Too much trans fats, refined sugar

www.makingbabies.com
Does changing a patient’s dietary consumption of proteins and carbohydrates impact blastocyst development and clinical pregnancy rates from one cycle to the next?

• To analyse the nutritional components of those patient’s diet to see if a change in their diet habits will impact blastocyst development and implantation
  
  Average BMI was 26; age 35+

• Average protein increase was 16.4%
• Average carbohydrate decrease was 22.3%
• Blastocyst formation increased significantly from 18.9% to 45.3%
• Clinical pregnancy rate increased from 16.6% to 83%
• Conclusion: Lower your carbohydrate intake and increase your protein intake at each meal during the 3 months of preconception


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### Protein Rich Foods

#### Good Quality

- Lean meat
- Poultry
- Game
- White fish
- Oily fish
- Shell fish
- Eggs

- Dairy foods
- (type A2 - goat, ewe, buffalo)
- Legumes/Pulses
- Nuts/Seeds
- Vegetables
- Spirulina, Chlorella
- Cereals
Body Mass Index (BMI)

- Pre-pregnancy weight is a risk factor with the risk increasing as the BMI falls below 24kg/m2
- USA data shows that 50 per cent of infertile women are below 20.7kg.m2
- 73.3% miscarriages when BMI is below 20
- Hackney hospital: mothers of the healthy weight babies were on average BMI 23.7kg/m2
- [www.makingbabies.com](http://www.makingbabies.com)
What are women eating?

- 110 published research studies reviewed the diets of UK women in childbearing years,
- 1:5 low iron (42% less than 8mg/day);
- 11% inadequate Vitamin B2;
- 9% low magnesium;
- 25% had low 2.1ug intake Vitamin D (norm 7-41ug/day)
- Many fall below recommended levels of iodine
- 83% ate 6g+ salt daily
- 19-24 year olds ate 1 1/2 portions fruit/vegetables only per day
- 11g dietary fiber per day
- Excesses of total fat intake, alcohol and sodium were exceeded

Scientific Advisory Committee on Nutrition SACN 2008
National Diet and Nutrition Survey

• 84% of women fail to achieve the RNI reference nutrient intake for folic acid
• 74% of women are falling short on nutrients from their diet
• 80% decrease in intake of omega 3 fatty acids from fish
• 50% more saturated fats are eaten than the recommended level
• 15% of women and 13% of men fail to eat 5 fruit and vegetables daily

Professor Tim Lang
Professor of Food Policy at City University in London

• “We think of something like an orange as a constant, but it isn’t”
• In 2002 a Canadian newspaper reported that fruit and vegetables sold in supermarkets contained ‘far fewer nutrients’ than fifty years ago
• “Consumers would have to eat eight oranges to obtain the level of vitamin A than an earlier generation got from one fruit”
  • Swindled: from poisoned sweets to counterfeit coffee, The Dark History of the Food Cheats” Bee Wilson p301, 2008

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British Vegetables

• These have lost much of their mineral content they had half a century ago
• The blame has been laid on intensive farming methods
• Broccoli has 80 per cent less copper
• Tomatoes have 25 per cent less calcium
• Carrots have 75 per cent less magnesium

• Swindled: from poisoned sweets to counterfeit coffee, The Dark History of the Food Cheats” Bee Wilson p301, 2008
Food Glorious Food

- Meats - red - poultry - game - all organic
- Fish - white - oily - shell
- Eggs - hens - ducks - quail
- Fruits - citrus - berries - hard - soft
- Vegetables - root - red - green leafy
- Pulses - peas - beans - lentils - peanuts - lupin
- Gourds - pumpkin, acorn squash, peanut squash
- Nuts and seeds
- Non-gluten grains - rice, corn, millet, buckwheat
- Tubers - tapioca - arrowroot - chufa - ginger
Rainbow Meals
Protective Phytochemicals

Flavonoids, indoles - Dark green leafy vegetables
- Glucarate, Suplorphane, Dithiolthiones - cruciferous green leafy vegetables, shown to reduce existing tumors
- Isothiocyanates & phenol compounds - anti-cancer activity, green vegetables
- Carotenoids - Red vegetables
- Proanthocyanidins - Blue-black-red berries/fruit

Eicosapentanoic acid - Oily red, and white fish oils
Lean meat free from hormones ie. organic preferred - organic pasture fed lamb, venison, chicken, turkey
Eicosanoids ALA - linseed oil, extra virgin olive-unhydrogenated

Lycopene - carotenoid antioxidant - is protective against cancer, tomato

Lutein - antioxidant carotenoid in tomato, red pepper, pink grapefruit
Endometriosis and Infertility

- Endometriosis is also associated with infertility, with a stronger association between severity of disease and impact on fertility, probably through reduced egg quality and reduced endometrial receptivity to implantation
  - Lessey 2011
- Both endometriosis and adenomyosis (lesions occurring within the uterine intramural layer) reduce the chance of success of assisted reproductive treatment
Do foods cause endometriosis?

• Harvard School of Public Health have shown that women who have 2 or more cups of caffeinated coffee (4 cans of cola) per day were found to be twice as likely to develop endometriosis as other women


• 1992 German research found that women with high blood levels of PCBs (polychlorinated biphenyls) had a higher prevalence of endometriosis

Holloway M. An epidemic ignored: endometriosis linked to dioxin and immunologic dysfunction. Sci Am 1994;270:24-26

• Pesticide chemicals weaken the immune system. The natural killer cells and other white blood cells that are meant to watch for abnormal cells have been shown to be less effective in women with endometriosis

Dmowski WP,. Immunological aspects of endometriosis. Int J Gynecol Obstet 1995;50(suppl1):S3-S10

• PCBs show up in fish, chicken, cattle, pigs - animals that are fed grains contaminated with organochlorines that concentrate in their organs and tissues; these may also be on non-organic fruits and vegetables.
Selected food intake and risk of endometriosis

- Dietary factors have been the focus of a growing number of endometriosis-patient-directed books and web sites.
- A hospital-based, Italian case-controlled study (n=504) observed a statistically significant protective effect of current green vegetable (OR=0.3; CI=0.2-0.5) and fruit consumption (OR=2.0; CI=1.4-2.8)
- and a significant risk of endometriosis with greater red meat consumption (OR=2.0; CI=1.4-2.8)


OR = odds ratio; CI = confidence interval
The Menstrual Cycle

- Day 1 - 4 Menstrual Phase
- Red healthy blood flow
- Rarely clots
- Mild cramps only

- Iron, Vitamin C, Vitamin E, Omega 3 oils, Magnesium
Day 5 - 12 Follicular Phase

- Day 13 is the oestrogen peak for several hours, that promotes the uptake and binding of the FSH

- Oestrogen prepares the womb lining for a pregnancy and prepares the cervical mucus ready for ovulation egg transport.

- The new follicle takes 12.6 days to develop to an ovulable stage

- Calcium, copper, omega 6 oils, Vitamin E, Vitamin C

Day 13 -15 Ovulation Phase

- FSH rises and then falls off
- LH peaks mid-cycle to release the egg from the ovary once the dominant follicle reaches 2 cm diameter
- 17a-hydroxyprogesterone production begins
- Prostaglandins rise at this stage
- Testosterone rises at this stage, secreted by the ovary
- Mittelschmerz cramps cause the Fallopian tubes to usher the ova along and into the womb
- Ovum has a maximum viable life of 6 hours
- Sperm can survive up to 7 days in the female system. Implantation would occur up to Day 19
- Amino acids, Vitamin A, C, E, D, Zinc, Manganese

References:
Anterior Pituitary

Posterior Pituitary

FSH

LH

prolactin

Oestrogen & Progesterone

Oocytes

Corpus Luteum

Blood Vessels

Ovum

Granulosa Cell

Follicles

Ovary

oxytocin

(-)

LH

Progesterone

(+)

Oestrogen
Day 16 - 24 Luteal Phase

- Progesterone increases
- Body temperature rises
- The immune response reduces to help maintain any possible pregnancy
- The follicle collapses and becomes the ‘Corpus Luteum’ or golden body which fills with golden fluid producing the progesterone
- Progesterone precursors are vitamin D, fish oils, magnesium, zinc, B vitamins


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Day 25-28
Premenstrual Phase

• More tired, abdominal bloating and bowel disorders, tetchy, breasts tender, headaches, cravings, overheating, bladder sensitivity, menstrual cramps
• Prolactin hormone rises at PMS and breast tenderness may occur.
• Vitamin E, zinc, magnesium, chromium and vitamin B6 and fish oils
• PMS depression symptoms need vitamin C, Vitamin D and calcium at this time as oestrogen levels fall at this time
• If you are not pregnant the menstrual cycle will begin all over again
Menstruation is Normal

• The amount of blood lost at menstruation is usually 60ml (2 fl.oz)

• www.mooncup.com

• Your period should consist of
  • 1. Red blood/moderate flow
  • 2. Small or no clots
  • 3. No pain or very mild cramps
  • 4. Approx 4 days duration

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Poor Menstruation

• Your period is going wrong if
• 1. the blood is brown sludgy/black tarry blood
• 2. you have excruciating pain
• 3. the blood is extremely heavy or flooding
• 4. If you are unable to work, pass out or vomit
• See your GP and **insist** upon referral to a gynaecologist
• Test: Iron levels

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Omega 3 and Omega 6 essential fatty acids and pain reduction

• In a group of Danish women, a higher intake of omega 3 fatty acids or a higher ratio of omega 3/omega 6 fatty acids was associated with reduced menstrual pain


• Reduce your saturated and trans fatty acid intake by half - then your oestrogen levels will be lowered by 20%

• Reduce butter, cream, cheese, lard, hydrogenated margarine & oils

• Use oily fish, nuts and seeds, dark leafy vegetables, cold-pressed extra virgin olive and walnut oils
B Vitamins

- Low intake of B vitamins depresses GnRH secretion from the hypothalamus and affects the development of the eggs and sperm
- The ovaries need vitamin B1, B2, B5, B6, folic acid, calcium, magnesium, zinc, iodine and iron
- Eggs, low fat dairy, lamb, poultry, green veg

www.makingbabies.com

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Magnesium

- Magnesium relaxes smooth muscle.
- Mg helps produce energy in each cell
- Without magnesium we would be plagued with cramps, spasms and convulsions
- Magnesium is vital in synthesizing myelin around nerves or they become sensitive to pain
- Magnesium has an calming effect on the CNS
- Magnesium is a preventative against miscarriage and painful contractions of the uterus muscle
- Spinach, kelp, green vegetables, nuts, seeds
  - Muller P, First international symposium on magnesium deficit in human physiology.. 1971
Non-heme Iron

- Women who regularly took an iron supplement or a multivitamin with extra iron
- non-heme iron, which holds oxygen within cells, e.g. fruits, vegetables, grains, eggs, meat
- were 40% less likely to have had trouble getting pregnant than women who did not take iron
- The benefit came in the 40-80mg dose range
- GP Test - Iron Levels
  - Human eggs (oocytes) and the granulosa cells that surround them before ovulation have receptors for transferrin
- Granulosa cells make their own transferrin

The Mediterranean Diet

- Food eaten in southern Italy, Crete, Greece
- Abundant plant foods, fruits, vegetables (root, red, green), legumes, gourds, nuts, seeds, whole grain cereals
- Dessert: fresh fruit, small amounts sheep and goats cheese
- Main fat source: extra-virgin olive oil
- Main animal protein: fish (white, shell, oily), poultry, eggs, lamb and goat in small amounts
- Red meat: pork and beef rarely
- Wine: small amounts consumed with main meals
- Sweetener: local honey
- Food comes from small local farms
- Significant amount of physical work in the field or in the kitchen
- Life expectancy is among the highest in the world

Mediterranean diet decreases endometriosis-associated pain: A prospective cohort study

- 68 women with laparoscopically diagnosed endometriosis were placed on a Mediterranean diet over 5 months (43 women completed the trial).
- They ate fresh vegetables, fruit, white meat, fish, soy products, whole-meal products, foods rich in magnesium and cold-pressed oil
- Sugary drinks, red meat, sweets and animal fats had to be avoided
- Subjective pain sensation was measured by numeric rating scale
- The group experienced significant reduction of dysmenorrhea, dyspareunia and dyschezia
- Endometriosis-associated pain symptoms may be influenced positively by a Mediterranean diet

Fish, shellfish, wild game
Pasture-fed V Grain-fed

• In terms of dietary fat consumption fish, shellfish and wild game contain a greater percentage of ‘structural fat’ (omega-3 cis-fatty acids) and less “storage fat”
• Domesticated cereal-fed livestock contains more “storage fat” per unit weight
• Structural fat tends to be significantly more unsaturated than storage fat, which may help explain why the consumption of fish and game appears to be protective against metabolic syndrome (and is less inflammatory), while excess consumption of domesticated meat increases risk

Chicorée frisée / Curly endive

Rougette
Red lettuce

Batavia

Pissenlit
Dandelion

Trévisan
Radicchio

Cresson
Watercress
Control of Oestrogen is a Nutritional Process Disturbed by:

- Lack of vitamin B complex, B1 B2 B3 B5 B6 Choline Inositol (Eat Green Veg)
- Too little protein - eat 30gm per day - legumes, nuts, seeds, white meat, fish, wholegrain cereals, non-bovine dairy food, organic eggs
- Too much refined sugar - deficiency of B3 zinc and chromium - malfunction of blood sugar levels - Hyperinsulinism PCO?Endo?

Cruciferous Vegetables

- Broccoli, Brussel Sprouts, Cabbage
- Contain Indole-3 carbinol (I#C) which prevents the receptor binding of ‘stronger’ oestrogens
- Sex Hormone Binding Globulin (SHBG)
- Controls oestrogen and testosterone
- Vegetarians have greater faecal excretion of oestrogens
  Goldin BR et al, 1982 NEJM, 307, 1542-1547

Test: SHBG
Vegetarian diet and oestrogen metabolism

• Vegetarian women excrete 2-3 times more oestrogen in faeces and have 50% lower free oestrogen in their blood compared to meat eaters

• High fibre diets may help explain the lower PMS symptoms as excess oestrogen binds to soluble fibre then it can be excreted from the body

• Goldin BR et al, 1982 NEJM, 307, 1542-1547
How the Mid-Victorian Ate

- High level physical activity (>4000 calories/day)
- High intake: Omega-3, pre-biotic fibre, whole grain
- Fruits and vegetables: 10 or more portions/day
- Prebiotics (Jerusalem artichokes, chicory)
- Phase-2 upregulators (watercress, brassica)
- Innate immuno-primers (e.g., Ω-3, Ω-6 β-g)
- Anti-inflammatory foods (oily fish, nuts, greens)
- Low intake: salt/alcohol/Very low intake: tobacco, processed foods
- A super-Mediterranean diet
- 1919-1939: processed foods start to be used by the middle class World War II: Dig for Victory, rationing
Food Rules

Eat food
Not too much
Mostly plants

Spend as much time enjoying the meal as it took to prepare it.


We should eat to live, not live to eat

Benjamin Franklin
Modern Diets
Edible Foodlike Substances

- Eat food!
- 17,000 new ‘products’ are brought into supermarkets each year
- 80,000 chemicals in USA foodstuffs [http://www.epa.gov/ncct/](http://www.epa.gov/ncct/)
- NIH Chemical Genomics Center is conducting screening of multiple chemicals
- Highly processed concoctions designed in laboratories by food scientists - industrial novelties
- Chemical additives with which the body has not long been acquainted
  “If your grandmother couldn’t pronounce it, don’t eat it”
- Choosing real nutrient-dense food is a real challenge.

Southampton Women’s Survey 2006

• Studied the diet, body composition, lifestyle and social circumstances of over 12,000 women from before pregnancy until after they have had children

• 54% non-pregnant women (20-34yrs) drank more than 4 units alcohol per week
• 39% had daily caffeine intake over 300mg/day
• Only 47% ate 5 portions fruit and vegetables per day
• Only 0.06% had taken 400ug folic acid before pregnancy
• A large proportion of women before pregnancy fail to meet even basic diet and lifestyle guidelines
Wheat-free Oats

- Oats contain 3 times more magnesium as calcium, good source of vitamin B1 and soluble fibre
- Oat bran reduces cholesterol and oestrogen levels
- Higher in polyunsaturated oils
- 20% saturated fat 80% polyunsaturated and monounsaturated fats

Soluble fibre

• The more soluble fibre in the diet, the better your natural oestrogen disposal system works
• oats, vegetables, beans, plant foods keep estrogen levels eliminating naturally rather than re-circulating

Georgetown University Medical Center
Diet modification in 19 women with moderate to severe menstrual pain
Avoided animal fats for two months
Ate simple unprocessed foods (rice, whole grains, yoghurt, beans, vegetables, fruits), rich in soluble fibre
The change was profound; they all needed much less pain medication than before.

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Linseed oil

• Omega 3 essential fatty acids
• Short-chain alpha linolenic acid (ALA)
• It contains twice as much ALA as fish oil
• In breast cancer research the higher the level of ALA in breast tissue, the less likely the cancer was to spread to lymph nodes, lignans may have anticancer effects

• increases the production of SHBP (sex-hormone-binding-protein), that regulates oestrogen levels.

• Magnesium, potassium, manganese, phosphorus, iron, copper
Proanthocyanadins

- Berry fruits, grapeseed, pine bark-pycnogenol, red wine, raspberries etc.
- Anti-inflammatory effects
- Flavinoids
- Increase vitamin C levels in cells
- Decrease capillary wall leakage
- Prevent damage at cell wall

Natural Probiotic Yoghurt

- Lactobacillus bulgaricus Lactobacillus acidophilus
- Bifidus bacterium lactis Streptococcus thermophilus
- Saccharomyces bulgaria (beneficial yeast)
- Maintains normal intestinal flora which suppress harmful bacteria
- Increases T helper cells and activated T lymphocytes and NK cells, improving phagacytosis - Immunity improved
- Lowers cholesterol and oestrogen
- Reduce the risk of colon cancer. Aids detoxification of oestrogen hormone, meat carcinogens,
  and environmental fat-soluble toxins which are excreted in bile
- Protein, calcium, phosphorus, riboflavin, vitamin B12
  - Murray M, Pizzorno J. Healing Foods. 2005 p589
Probiotic Foods

- Live yoghurt
- Kefir
- Raw cheese
- Sauerkraut
- Chicory
- Asparagus
- Leeks

- Onion, garlic
- Jerusalem Artichokes
- Tamari Sauce
- Miso soup
- Pickled ginger
- Picked vegetables
Lactobacillus acidophilus to reduce oestrogen

- It is crucial to inhibit the faecal bacterial enzyme which converts oestrogen to more toxic forms
- And to decrease the reabsorption of excreted, detoxified oestrogen
- Soluble fibre absorbs degraded oestrogen and helps eliminate them from the body
- e.g. pectin in fruits, alginates in seaweed, oat bran, vegetables, nuts, seeds
- Babies acquire bacteria during birth. A newborn girl treated with antibiotics may grow up with an altered microbiome, and be unable to provide her own children with the missing bacteria

Blaser M. 24th March 2012 International Human Microbiome Congress, Paris
Gut Flora Health Effects

• Probiotic effects have been associated with a reduction of mucosal inflammation in a variety of animal models of inflammatory bowel disease

• They have even been shown to modify inflammatory processes distant from the gut, in the liver and in the synovium and potentially the brain


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Salmon

• Brain food
• Cold water fish - Pacific - chinook, sockey; Atlantic - Norwegian
• Protein, potassium, selenium, B12, iodine, niacin, phosphorus, omega 3 fatty acids EPA, DHA, anti-inflammatory oils
• Farmed salmon higher pesticide levels PCBs; synthetic carotenes colour fish (linked to retinal damage)
• Wild salmon 20% higher protein content, 20% lower fat content than farmed; high in carotenes from eating pink krill

Avocado

- Potassium == 3 bananas, vitamin E, B complex vitamins, fibre
- 20% essential fatty acids - oleic acid, linoleic acid
- Lowers cholesterol
- Contain enzymes called chitinases that may trigger allergic reactions in people sensitive to latex (like bananas)
- Choose organic when possible
Onions
Allium cepa

Onion, leek, garlic, shallots

- Vitamin C, B6, B1, K, Biotin, chromium, fibre, folic acid
- Organic sulphur compounds, flavonoids (quercitin), phenols, pectin, volatile oils
- Blood sugar lowering action
- Onion extract was found to destroy tumour cells in test-tubes and to arrest tumour growth

Walnuts

- Walnuts are high in omega-3 fatty acid alpha linolenic acid (ALA)
- aids reduction of inflammation
- Research found that replacing 35% of EFA calories with walnuts improved the health subjects on a Mediterranean diet,
- 3 ounces per day for 4 weeks
- increased efficiency in the liver clearance of LDL cholesterol

MUFA = monounsaturated fatty acids; LDL = low-density lipoprotein
Celery

- Coumarins: -3-n-butylphthalide (3nB)
- cancer prevention
- enhances white blood cell production
- tones vascular system
- lowers blood pressure (4 sticks a day)
- lowers cholesterol and oestrogen
- improves liver detoxification
- Eat raw 3 times a week for it’s anti-inflammatory action
- 2 sticks 7 calories
- Potassium, sodium, vitamin C, calcium
Apple

- ‘An apple a day keeps the doctor away’
- 25 different varieties
- Vitamin C, potassium, ellagic acid, flavinoids (quercitin), chlorogenic acid, caffeic and malic acids
- Reduced risk of inflammation, heart disease, cancer, asthma, type 2 Diabetes
- Finland trial on 1,500 adults those who ate the most apples, onions, and tea had 20% lower risk of heart disease than those who ate the lowest amount
- High in pectin, improves intestinal muscles, lowers cholesterol and oestrogen

Extra Virgin Olive Oil

- contain oleocanthal, chemically related to ibuprofen.
- a potent anti-inflammatory painkiller
- Pain and inflammation can be triggered when levels of TNF-alpha and interleukin-6 increase
- Olive oil extract reduces both TNF-alpha, interleukin-6
  Milan Heart surgery patients given 5 tableesp per day -.
  lowers blood pressure, lower blood cholesterol 13%, improved HDLs
Ginger

• Anti-inflammatory - reduction pain levels and improvement in mobility
• Inhibit formation of inflammatory cytokines of the immune system
• Fresh ginger root, powdered, crystallised
• Anti-nausea - Calms the stomach
• Promotes the elimination of intestinal gas, and spasms

## Prevalance of Nutritional Deficiency in Hospitalized Patients with Inflammatory Bowel Disease

<table>
<thead>
<tr>
<th>Deficiency</th>
<th>Prevalance %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron deficiency</td>
<td>40</td>
</tr>
<tr>
<td>Low serum B12</td>
<td>48</td>
</tr>
<tr>
<td>Low serum folate</td>
<td>54-64</td>
</tr>
<tr>
<td>Low serum magnesium</td>
<td>14-33</td>
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<tr>
<td>Low serum potassium</td>
<td>6-20</td>
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<tr>
<td>Low serum retinol</td>
<td>21</td>
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<tr>
<td>Low serum ascorbate</td>
<td>12</td>
</tr>
<tr>
<td>Low serum 25-OH D (Vit D)</td>
<td>25-65</td>
</tr>
<tr>
<td>Low serum zinc</td>
<td>40-50</td>
</tr>
</tbody>
</table>


Low levels of vitamin K, copper, niacin and vitamin E have also been reported.
## Top 20 IgG delayed onset food allergies

1. Cow’s milk
2. Wheat
3. Gluten
4. Yeast
5. Egg white
6. Cashew nuts
7. Egg yolk
8. Garlic
9. Soya beans
10. Brazil nuts

11. Almonds
12. Corn
13. Hazelnuts
14. Oats
15. Lentils
16. Kiwi fruit
17. Chili Pepper
18. Sesame seeds
19. Sunflower seeds
20. Peanuts
NF-KappaB

- Subjects were given a single meal of egg and sausage muffin with two hash browns
- The documented increase in NF-KappaB after the meal was 150 per cent
- This increase lasted for 2 hours after the meal
- It increased the inflammatory marker CPR (C-Reactive Protein) - measured in blood tests to ascertain the presence of inflammation
- **NF-kappa B linked to acute and systemic chronic inflammation**


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Gluten-free diet: new strategy to manage painful endometriosis

- Pelvic pain affects 4-39% women
- 10-40% of all outpatient gynae visits
- 207 patients with severe painful endometriosis-related symptoms
- Dysmenorrhoea was used to measure painful symptoms
- 12 months follow-up after gluten-free diet
- 156 patients (75%) reported statistically significant change in painful symptoms
- 51 patients (25%) reported a little change
- No patients got worse

Conclusion: 75% women found that their painful symptoms decreased after 12 months on GF diet

Coeliac Disease and Sub-fertility

- A genetic trait that confers gluten sensitivity, which interferes with reproduction
- There is a high prevalence of infertility regardless of which partner has coeliac disease
- The mother…is more likely to experience recurring miscarriage, premature births, low birth weight

**Blood Test: gluten sensitivity**

www.makingbabies.com
Thyroid disease and endometriosis

- Auto-immune diseases such as those involving the thyroid, are thought to be involved in fertility
- Oestrogen and thyroxine are antagonistic hormones
- Thyroid auto-antibodies are used to predict women at risk for miscarriage
- **Blood Test: Thyroid auto-antibodies**
Homocysteine

- High homocysteine indicates you are low in key nutrients like vitamin B12 and folic acid
- It also damages the placenta, then DHA from omega 3 oils cannot be absorbed
- Danish Study concluded that high homocysteine or low folate can indicate risk factors for repeated early pregnancy loss...
- 3-4 fold greater risk of suffering further miscarriages

**Blood Test: Homocysteine levels**


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Anti-inflammatory foods

* Berries
  • Flax seeds
  • Omega-3-rich eggs
  • Garlic
  • Herrings/kippers
  • Olives
  • Red onions
  • Mackerel
  • Pumpkin seeds
  • Salmon
  • Sardines
  • Turmeric
  • Pineapple (boswellia) and ashwagandha

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Raw Meals

- Avocado, tomato, pinenuts, black olives
- Watercress, flaked almonds, grated carrot
- Celery, apple, walnuts, yoghurt
- Pecans, chicory, red peppers, hummus
- Beetroot, rocket, pistachio and olive balls
- Avocado, spring onion and yoghurt soup
- Smoked salmon, caper yoghurt, watercress
- Avocado, grapefruit, lettuce, feta cheese
Normal Menu

• Breakfast - Cereal, milk, toast and jam, tea
• Mid Morn - Kitkat and coffee
• Lunch - Cheese sandwich, cake
• Mid Day - Tea and biscuits
• Dinner - Pizza and Coke, Ice-cream
• Supper - Crisps, chocolate
New Food Choice

• Breakfast - Fresh fruit smoothie, herb tea
• Mid Morn - Nuts and water
• Lunch - Salmon salad, fruits, tea with lemon
• Mid Day - HM Flapjack and water
• Dinner - Chicken in lemon sauce, broccoli, grilled tomato, new potatoes, berries and crème fraiche
• Supper - Coconut and elderflower cordial
Foods to Reduce or Avoid
Why eat something if it makes you ill?

• Milk chocolate, sweets, candies, ice-cream
• Wheat foods - bread, cakes, cookies, pasta
• Bovine dairy foods - cheese, cream, milk
• Coffee, alcohol, fizzy drinks, aspartame
• Red meat, pork, lamb, beef - eat organic only
• Hidden trans-fats in refined foods
• Edible-food-like substances designed in labs

• Try a 1 month exclusion diet if a food upsets you
Vitamins and Minerals
www.makingbabies.com

• “55 per cent of all women in their childbearing years reported taking vitamin-mineral supplements rarely or occasionally”
  - Keen CL, Zidenberg-Cherr S, ‘Should vitamin-mineral supplements be recommended for all women with childbearing potential?’ 1994 Am J Clin Nutri; 59 (supple); 532S-539S

• “women considered at the highest risk for nutritional inadequacy had lower rates of supplement use”

Judicious use of nutritional supplements whilst the diet is being corrected can improve reproductive health

Harvard University and the American Dietetics Association advise a multi-vitamin-mineral to be taken daily

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Be Aware Not Anxious

• Eat as well as you can, 3 main meals, 2 healthy snacks
• Just buy the best quality food you can afford, organic when possible or peel
• Cook from fresh when possible, soups, salads, stews/casseroles, bean feasts, broths…
• www.abelandcole.co.uk
• www.riverford.co.uk
• www.deer-n-dexter.co.uk
• www.wheatanddairyfree.com
• Trust your own senses
Principles of Healthy Diet

1. Eat rainbow meals
2. Freshest fruits and vegetables
3. Organic if possible to reduce pesticide exposure
4. Keep sugar low
5. Keep meat and dairy food low
6. Eat only organic butter and extra virgin olive oil or coconut oil
7. Reduce salt intake, use herbs and spices to flavour
8. Drink fresh clean water daily
Shopping List

• Fish
• Poultry
• Lamb, venison, duck
• Cottage cheese, feta, mozzarella
• Eggs
• Tofu, Miso
• Nuts, Seeds
• Peas, beans, lentils
• Onion, leek, garlic
• Extra virgin olive oil/organic butter
• Green leafy vegetables
• Red vegetables
• Salad vegetables
• 8 tumblers water/weak tea a day
• Snack on nuts/seeds
• Red wine
• Ginger wine
• +Exercise 20 mins per day
• Dessert - Berries, banana, dates, figs
University of Mississippi Fertility Study

• “Fertility was restored after nutritional counseling in 19 out of 26 women, who conceived spontaneously in due course

• All the women had been underweight at the outset but were encouraged to gain half a pound per week

• No drugs were prescribed”

• Bates GW, Bates SG, Whitworth NS, Reproductive failure in women who practice weight control, in Fert Ster,37:373-8, 1982

www.makingbabies.com
Fertility With a Nutritional Approach

dian@endometriosis.co.uk
www.endometriosis.co.uk
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