(BHRT) Supporting Literature

Chem Res Toxicol 1998 Sep;11(9):1105-11
The equine estrogen metabolite 4-hydroxyequilenin causes DNA single-strand breaks and oxidation of DNA bases in vitro.

Chen Y, Shen L, Zhang F, Lau SS, van Breemen RB, Nikolic D, Bolton JL
Department of Medicinal Chemistry and Pharmacognosy (M/C 781), College of Pharmacy, The University of Illinois at Chicago, IL, USA.

The abstract of this article can be viewed online.
Go to PubMed: www.ncbi.nlm.nih.gov/PubMed
In the search box, enter the following PMID: 9760286

The PEPI Trial, a 3-year multicenter, randomized, double-blind, placebo-controlled study of 875 healthy postmenopausal women, confirmed that synthetic progestins partially negate the beneficial effects on cholesterol levels that result from taking estrogen. Natural progesterone, on the other hand, maintains all the benefits of estrogen on cholesterol without any of the side effects associated with synthetic progestins, such as medroxyprogesterone acetate.

JAMA 1995 Jan 18;273(3):199-208
Effects of estrogen or estrogen/progestin regimens on heart disease risk factors in postmenopausal women. The Postmenopausal Estrogen/Progestin Interventions (PEPI) Trial.

The Writing Group for the PEPI Trial.

The abstract of this article can be viewed online.
Go to PubMed: www.ncbi.nlm.nih.gov/PubMed
In the search box, enter the following PMID: 7807658

Certain progestogens, such as micronized progesterone, can be administered concurrently with estrogen replacement therapy, providing protection against endometrial hyperplasia without significantly affecting the beneficial effects of estrogen on lipid profiles, atherosclerosis and vascular reactivity.

J Reprod Med 2000 Mar;45(3 Suppl):245-58
Rationale for hormone replacement therapy in atherosclerosis prevention.

Wagner JD
Comparative Medicine Clinical Research Center, Wake Forest University School of Medicine, Winston-Salem, NC 27157-1040

The abstract of this article can be viewed online.
Go to PubMed: www.ncbi.nlm.nih.gov/PubMed
In the search box, enter the following PMID: 10756506

J Clin Endocrinol Metab 2002;87:1062-1067
Estrogen status correlates with the calcium content of coronary atherosclerotic plaques in women.

Christian RC, Harrington S, Edwards WD, Oberg AL, Fitzpatrick LA.
Division of Endocrinology, Metabolism, and Nutrition, Department of Internal Medicine, Mayo Clinic and Mayo Foundation, Rochester, Minnesota 55905, USA.

The abstract of this article can be viewed online.
Go to PubMed: www.ncbi.nlm.nih.gov/PubMed
In the search box, enter the following PMID: 11889163

J Neurosci. 2003 Dec 10;23(36):11420-6
Estradiol attenuates programmed cell death after stroke-like injury.

Rau SW, Dubal DB, Bottner M, Gerhold LM, Wise PM.
Department of Physiology, University of Kentucky College of Medicine, Lexington, Kentucky 40536, USA.

The abstract of this article can be viewed online.
Go to PubMed: www.ncbi.nlm.nih.gov/PubMed
In the search box, enter the following PMID: 14673006

Endocrinology 2001 Mar 1;142(3):969-973
Minireview: Neuroprotective Effects of Estrogen-New Insights into Mechanisms of Action.

Wise PM, Dubal DB, Wilson ME, Rau SW, Bottner M
Department of Physiology, College of Medicine, University of Kentucky, Lexington, Kentucky 40536.

The abstract of this article can be viewed online.
Go to PubMed: www.ncbi.nlm.nih.gov/PubMed
In the search box, enter the following PMID: 11181507

Mayo Clinic researchers surveyed 176 women taking natural micronized progesterone who had previously taken synthetic progestins. After one to six months, the women reported an overall 34% increase in satisfaction on micronized progesterone compared to their previous HRT, reporting these improvements: 50% in hot flashes, 42% in depression, and 47% in anxiety. Micronized progesterone was also more effective in controlling breakthrough bleeding.

J Womens Health Gend Based Med 2000 May;9(4):381-7
Comparison of regimens containing oral micronized progesterone or medroxyprogesterone acetate on quality of life in postmenopausal women: a cross-sectional survey.

Fitzpatrick LA, Pace C, Wiita B.
Mayo Clinic and Mayo Foundation, Rochester, Minnesota 55905, USA.

The abstract of this article can be viewed online.
Go to PubMed: www.ncbi.nlm.nih.gov/PubMed
In the search box, enter the following PMID: 10868610

Fertil Steril 1999 Sep;72(3):389-97
Micronized progesterone: clinical indications and comparison with current treatments.

Fitzpatrick LA, Good A.
Department of Internal Medicine, Mayo Clinic and Mayo Foundation, Rochester, Minnesota 55905, USA.

The abstract of this article can be viewed online.
Go to PubMed: www.ncbi.nlm.nih.gov/PubMed
In the search box, enter the following PMID: 10519605

J Am Coll Cardiol 2000 Dec;36(7):2154-9
Natural progesterone, but not medroxyprogesterone acetate, enhances the beneficial effect of estrogen on exercise-induced myocardial ischemia in postmenopausal women.

Rosano GM, Webb CM, Chierchia S, Morgani GL, Gabraele M, Sarrel PM, de Ziegler D, Collins P.
Department of Cardiology, Ospedale San Raffaele, Rome, Italy.

The abstract of this article can be viewed online.
Go to PubMed: www.ncbi.nlm.nih.gov/PubMed
In the search box, enter the following PMID: 11127455

The following study concluded that in non-human primates, medroxyprogesterone in contrast to progesterone increases the risk of coronary vasospasm. Progesterone plus estradiol protected but medroxyprogesterone plus estradiol failed to protect, allowing vasospasm.

Nat Med 1997 Mar;3(3):324-7
Medroxyprogesterone interferes with ovarian steroid protection against coronary vasospasm.

Miyagawa K, Rosch J, Stanczyk F, Hermsmeyer K.
Oregon Regional Primate Research Center, Oregon 97006, USA.

The abstract of this article can be viewed online.
Go to PubMed: www.ncbi.nlm.nih.gov/PubMed
In the search box, enter the following PMID: 9055861

MPA reduces the dilatory effect of estrogens on coronary arteries, increases the progression of coronary artery atherosclerosis, accelerates low-density lipoprotein uptake in plaque, increases the thrombogenic potential of atherosclerotic plaques and promotes insulin resistance and its consequent hyperglycemia. These effects may be largely limited to MPA and not shared with other progestogens.

J Reprod Med 1999 Feb;44(2 Suppl):180-4
Progestogens and cardiovascular disease. A critical review.

Clarkson TB.
Comparative Medicine Clinical Research Center, Wake Forest University School of Medicine, Winston-Salem, NC

The abstract of this article can be viewed online.
Go to PubMed: www.ncbi.nlm.nih.gov/PubMed
In the search box, enter the following PMID: 11392029

Significant bone loss occurs during the 10 to 15 years before menopause when estrogen levels are still normal. Progesterone can stimulate new bone formation in women with osteoporosis. Dr. Prior measured estrogen and progesterone levels in female marathon runners who had osteoporosis. Although their estrogen levels were still high, they had stopped ovulating (common in female athletes) and progesterone levels had fallen, triggering the onset of osteoporosis. This can indicate a role for progesterone use, alone or combined with estrogen which reduces bone loss, in improving Bone Mineral Density.

Endocr Rev 1990 May;11(2):386-98
Progesterone as a bone-trophic hormone.

Prior JC.
Division of Endocrinology and Metabolism, University of British Columbia, Vancouver, Canada.

The abstract of this article can be viewed online.
Go to PubMed: www.ncbi.nlm.nih.gov/PubMed
In the search box, enter the following PMID: 2194787

The WHI assessed the major health benefits and risks of the most commonly used combined hormone preparation in the United States, the synthetic combination of conjugated equine estrogens and medroxyprogesterone acetate. Absolute excess risks per 10,000 person-years attributable to this synthetic hormone combination were 7 more CHD events, 8 more strokes, 8 more PEs, and 8 more invasive breast cancers, while

absolute risk reductions per 10,000 person-years were 6 fewer colorectal cancers and 5 fewer hip fractures.

JAMA. 2002 Jul 17;288(3):321-33
Risks and benefits of estrogen plus progestin in healthy postmenopausal women: principal results From the Women's Health Initiative randomized controlled trial.

Rossouw JE, Anderson GL, Prentice RL, LaCroix AZ, Kooperberg C, Stefanick ML, Jackson RD, Beresford SA, Howard BV, Johnson KC, Kotchen JM, Ockene J; Writing Group for the Women's Health Initiative Investigators.
Division of Women's Health Initiative, National Heart, Lung, and Blood Institute, 6705 Rockledge Dr, One Rockledge Ctr, Suite 300, Bethesda, MD 20817, USA.

The abstract of this article can be viewed online.
Go to PubMed: www.ncbi.nlm.nih.gov/PubMed
In the search box, enter the following PMID: 12117397

Among postmenopausal women aged 65 years or older, synthetic estrogen plus progestin did not improve cognitive function when compared with placebo. However, typical HRT users are in their 50s and this study focused on women aged 65 and over, who have a higher risk for dementia.

JAMA 2003 May 28;289(20):2663-72
Effect of estrogen plus progestin on global cognitive function in postmenopausal women: the Women's Health Initiative Memory Study: a randomized controlled trial.

Rapp SR, Espeland MA, Shumaker SA, Henderson VW, Brunner RL, Manson JE, Gass ML, Stefanick ML, Lane DS, Hays J, Johnson KC, Coker LH, Dailey M, Bowen D; WHIMS Investigators.
Department of Psychiatry and Behavioral Medicine, Wake Forest University School of Medicine, Winston-Salem, NC 27157, USA.

Estrogen plus progestin increases the risk of ischemic stroke in generally healthy postmenopausal women. This finding is consistent with the differences noted earlier between synthetic medroxyprogesterone acetate and bio-identical progesterone.

JAMA 2003 May 28;289(20):2673-84
Effect of estrogen plus progestin on stroke in postmenopausal women: the Women's Health Initiative: a randomized trial.

Wassertheil-Smoller S, Hendrix SL, Limacher M, Heiss G, Kooperberg C, Baird A, Kotchen T, Curb JD, Black H, Rossouw JE, Aragaki A, Safford M, Stein E, Laowattana S, Mysiw WJ; WHI Investigators.
Department of Epidemiology and Social Medicine, Albert Einstein College of Medicine, Bronx, NY 10461, USA.