

Diabetes at menopause - does it make a difference



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Estrogen



Progesterone



**Growth
Hormone**



Lower Basal Metabolic rate

+

Decreased Physical activity



**Obesity, a major contributor to
Diabetes.**

**Post Menopausal
Diabetic patient**

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graph TD; A([Post Menopausal Diabetic patient]) --> B[2-3 times increased risk of heart disease.];
```



**2-3 times increased risk
of heart disease.**

**Post
Menopausal
Diabetic patient**

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graph TD; A([Post Menopausal Diabetic patient]) --> B[Fluctuations in estrogen and progesterone]; B --> C[Fluctuation in sugar levels: Episodes of hypoglycemia]; C --> D[Difficulty in controlling diabetes]; E[Low estrogen levels] --> F[Quick utilisation of sugar.];
```

**Fluctuations in estrogen
and progesterone**

**Fluctuation in sugar levels:
Episodes of hypoglycemia**

**Difficulty in controlling
diabetes**

Low estrogen levels

Quick utilisation of sugar.

Diabetes

**Low
estrogen in
menopause**

Extreme fatigue and drowsiness; REM sleep affected

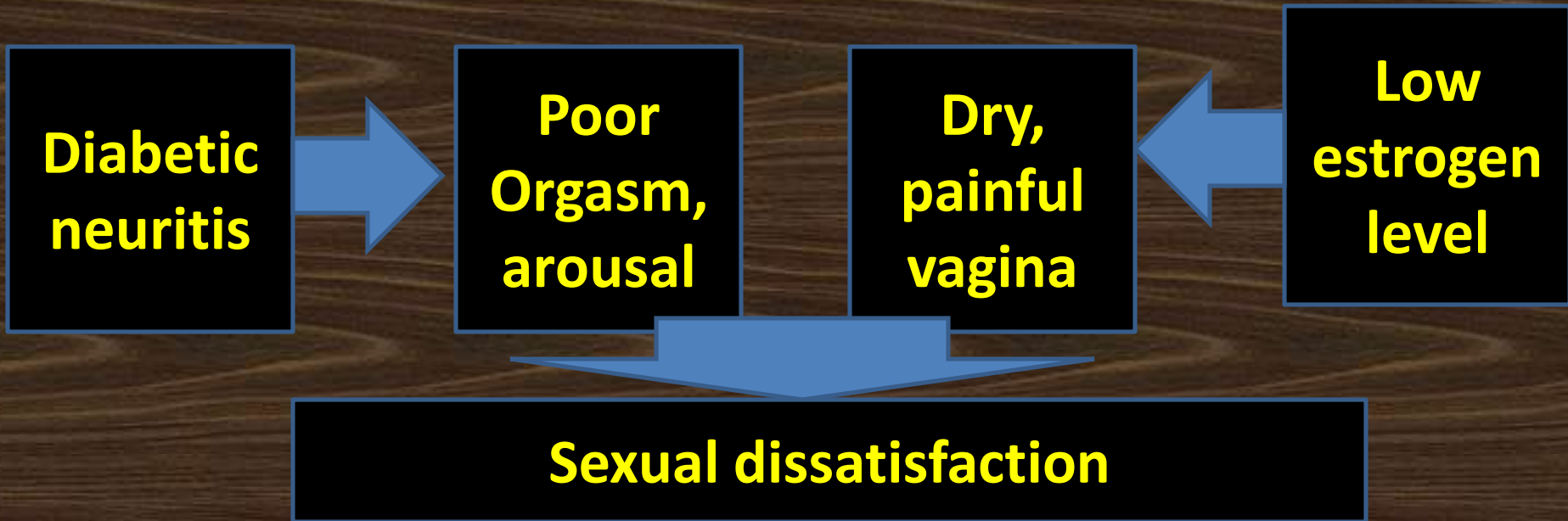
More vulnerable to stress, depression, and anxiety

Increases severity of diabetes

Weight gain at menopause transition



Increases need for insulin or oral diabetes medication



HRT in diabetes with menopause

HRT decreased glucose disposal by 17% compared with no change with placebo.

***HRT* did not affect body composition, body fat distribution, IL-6, leptin, or adiponectin.**

Cooper BC, Burger NZ, Toth MJ, et al. Insulin resistance with hormone replacement therapy: Associations with markers of inflammation and adiposity. Am J Obstet Gynecol 2007;196;123.e1-123.e7.

**There is a lack of evidence around the use of HRT
in women with Type I diabetes.**

Editorial Group: Cochrane Metabolic and Endocrine Disorders Group

Women with combined ERT have significantly lower levels of fasting plasma glucose and HbA1C

Dramatic reduction in plasma total cholesterol and low-density lipoprotein

Increased HDL

Women on HRT have lesser chance of developing Diabetes

Women on HRT have better controlled diabetes

**Oral HRT and Vitamin C and E
supplementation in 20 diabetic Post
menopausal women**

**only HRT treatment in 20 diabeti c post
menopausal women**



**Significant
fall in urea, uric acid, creatinine,
total bilirubin, conjugated bilirubin,
AST, ALT, LDH values.**

The HRT and VCE supplementations may strengthen the antioxidant defense system and they may play a role in preventing kidney and liver diseases of postmenopausal women with Type 2 diabetes.