

# DNA OXIDATIVE STRESS TEST

## 8-Hydroxy-2-deoxyguanosine (8-OHdG)

**Now the DUTCH Complete comes with even more information to assist patients in living a long, healthy life!**

We've added a biomarker, 8-OHdG, which measures the effect of endogenous oxidative damage to DNA. The marker is used to estimate the risk for various cancers and degenerative diseases.

Adjusting treatments and lifestyle to minimize the presence of 8-OHdG is a productive step toward health and longevity.

### 8-HYDROXY-2-DEOXYGUANOSINE (8-OHDG)

A biomarker of oxidative stress associated with:

- High Cortisol
- High Blood Pressure
- Diabetes
- Cystic Fibrosis
- Atopic Dermatitis
- Rheumatoid Arthritis
- Parkinson's Disease
- Alzheimer's Disease
- Huntington's Disease
- Pancreatitis
- Chronic Hepatitis
- Breast Cancer and other Various Cancers

8-OHdG is also used to estimate the DNA damage in humans after exposure to cancer-causing agents, such as tobacco smoke, asbestos fibers, heavy metals, and polycyclic aromatic hydrocarbons.

### WHAT HAPPENS?

When local antioxidant systems fail, oxidative damage permanently occurs to lipids of cellular membranes, proteins, and DNA. In nuclear and mitochondrial DNA, 8-OHdG is predominantly formed due to free radical-induced oxidative (pro-mutative) lesions.

### STUDIES AND CANCER

60 women with malignant tumors in a breast cancer study<sup>1</sup> and 82 men in a prostate cancer study showed 8-OHdG levels significantly higher than controls<sup>2</sup>. Levels did not decrease with prostatectomy but did decrease with androgen suppression hormone therapy.

### TREATMENT IDEAS WHEN ELEVATED

- Address the cause. Reduce stress and avoid toxins.
- Encourage increased intake of fruits and vegetables.
- Support antioxidant status. (Vit. C, Melatonin, Vit. E)
- Assess and evaluate glutathione (N-Acetyl Cysteine).



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### ADDITIONAL INFORMATION

Orange juice (but not pomegranate, apple, grapefruit or cranberry) reduced oxidative stress measured by 8-OHdG<sup>3</sup>. Whether normal or high polyphenol content, orange juice consumption decreased 8-OHdG levels over controls, and lead to weight loss in people with high BMI metabolic syndrome<sup>4</sup>.

Taking micronutrient and mineral supplements with antioxidants improved 8-OHdG in people who otherwise did not eat vegetables<sup>5</sup>.

When renoprotective effects of Berberine were measured by 8-OHdG in patients with both hypertension and Type 2 diabetes, Berberine reduced 8-OHdG among other measures<sup>6</sup>.

8-OHdG increased in the kidney and liver with a copper releasing implant, and researchers supposed that this might also happen with copper IUDs in humans<sup>7</sup>.

Smokers who have high 8-OHdG can lower it by taking pretty moderate amounts of fish oil with combined EPA/DHA<sup>8</sup>.

Urinary BPA increases associated with urinary 8-OHdG increase<sup>9</sup>.

Urinary methylparaben (MP) and ethylparaben (EP) increase along with 8-OHdG in pregnant women and their infants<sup>10</sup>.

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