



F₂-Isoprostanes (F₂-IsoPs)

CPT Code **82542/82570***

Order Code **C261**

Sample Type **Urine**

Tube Type **Yellow Top**

F₂-IsoPs levels are increased with:

- Cigarette smoking
- Poor diet (including high red meat intake)
- Sedentary lifestyle

Description

F₂-IsoPs, prostaglandin-like compounds formed from the free radical-mediated oxidation of arachidonic acid, are the 'gold standard' for measuring oxidative stress in the body.¹ F₂-IsoPs also have potent biological effects associated with inflammation and therefore may mediate chronic disease initiation and progression. Additionally, F₂-IsoPs may also act as potent vasoconstrictors² via thromboxane formation in the endothelium and promote platelet activation resulting in thrombus formation.³

Clinical Use

The F₂-IsoPs test may be performed on individuals at risk of future cardiovascular disease due to lifestyle risks, or those with a family history of cardiovascular disease.

Clinical Significance

- Elevated levels of urinary F₂-IsoPs are seen in conditions associated with increased risk for atherosclerosis⁴ and certain forms of cancer.^{5,6}
- F₂-IsoPs are elevated in smokers⁷ and with increased intake of red meat⁸ and are decreased with exercise.⁹

Testing Frequency

Testing of F₂-Isoprostanes is determined by an individual's medical history, but may be performed semi-annually or annually as necessary. If the initial test result is abnormal, then follow-up testing may be performed within 3-6 months following treatment.

Sample Type

The F₂-IsoPs test should be performed on a urine specimen collected in a yellow-top tube (without preservative).

Commercial Insurance or Medicare Coverage

Coverage guidelines, also known as NCD (National Coverage Determination) or LCD (Local Coverage Determination) have been established or posted by CMS (Medicare & Medicaid). Guidelines should be reviewed for coverage and limitation. Limited information has been provided by the majority of the larger carriers (Aetna, United Healthcare, Cigna, Blues).

REFERENCE RANGE

F₂-Isoprostanes
(ng/mg)

<0.86
Low

≥0.86
High

Treatment Considerations[†]

These treatment considerations are for educational purposes only. Specific treatment plans should be provided and reviewed by the treating practitioner.

✓ **Assess smoking habits.**⁷

- Smoking cessation is essential as individuals who smoke are at increased risk of heart disease and blood clots.

✓ **Assess lifestyle habits.**

- Consider diet,⁸ weight reduction,^{9,10} aerobic and anaerobic exercise,^{11,12} as appropriate.
- Consider optimal caloric intake as individuals who exercise a lot may not be taking in enough calories for their activity level. In short, they may be at risk for increased oxidation in their bodies due to lack of nutritional balance.¹³

✓ **Assess omega-3 fatty acid levels.**

- If not at optimal levels, consider fish oil supplements, other dietary supplements, and dietary recommendations for increasing omega-3 fatty acid levels.¹⁴

✓ **Assess clotting risk.**

- Consider anti-platelet therapy if history of CAD (i.e., myocardial infarction or revascularization) and/or cerebrovascular disease (i.e., transient ischemic attack or stroke).¹⁵

* The CPT codes provided are based on AMA guidelines and are for informational purposes only. CPT coding is the sole responsibility of the billing party. Please direct any questions regarding coding to the payer being billed.

† The treatment considerations are provided for informational purposes only and are not intended as medical advice. A physician's test selection and interpretation, diagnosis, and patient management decisions should be based on his/her education, clinical expertise, and assessment of the patient.

References

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