

For normal weight individuals with and those with general overweight but without belly fatness inhibition of the autoproduction of cortisol was obtained already at a dose of 0.05 mg and continuously up to maximum inhibition at 1 mg (for a few also at 0.5 mg).

For 'dangerously' belly fat individuals we found that the inhibition could not be measured until the dose was increased to 0.25 mg. Thereafter the maximum inhibitory dose was the same as for healthy individuals, i.e. maximum inhibition in the interval 0.5–1 mg.

This means that for belly fat individuals the inhibition curve is shifted towards the right. Critical doses which we found significant differences in the material (about 20 individuals) are 0.125 mg and particularly 0.5 mg (most distinct difference with this dose).

For the first time it is also shown that there is a, so-called dose-response curve, for the dexamethasone test, by which differences can be detected between individuals at risk of developing the metabolic syndrome and/or individuals with one or several risk factors/conditions related to the metabolic syndrome, when compared to healthy individuals.

The above mentioned doses hold for the tested substance dexamethasone. The effective dose varies for different cortisol agonists. Crude conversions of effective doses of the different cortisol agonists are found in the literature e.g. in FASS.

The cortisol agonist, that in this investigation was dexamethasone, was administered as a tablet. The cortisol content was measured twice in serum.

In the same investigation the cortisol content was in parallel measured in saliva for a small number of individuals. This was done with a standardized quid (Salivette), which the patient keeps in his mouth for about 45 seconds and thereafter seals in a simple and standardized way. The quids were then analysed for cortisol content. In the test we then found a good correlation between the cortisol content in serum and in saliva.

The invention also concerns a diagnostic system comprising a cortisol agonist as described above, and means to measure the cortisol content in saliva or in serum with the aim of measuring the inhibitory effect on the cortisol production. Such means for measuring the cortisol content are available as standard devices. The diagnostic system may also involve means to measure the basal cortisol content since, as shown above, it has been established that belly fat individuals have significantly lower basal cortisol values (less than 400 nmol/l serum) compared to normal population. By measuring at least at two different doses of the cortisol agonist (in the case of dexamethasone at 0.125 and 0.5 mg), and constructing an inhibitor curve taking into account both the measured inhibitory effect and the measured basal cortisol concentration, a very specific diagnostic test is obtained.

What is claimed is:

1. A method for diagnosing Metabolic Syndrome in an individual, said method comprising:

- (a) administering a cortisol agonist to said individual;
- (b) determining the inhibitory effect of said cortisol agonist on the production of cortisol by said individual

between 3 and 24 hours after administering said cortisol agonist; and

(c) diagnosing said individual for Metabolic Syndrome based on the inhibitor effect determined.

2. The method of claim 1, wherein step (b) comprises measuring the cortisol content in said individual.

3. The method of claim 2, wherein the cortisol content in serum or in saliva is measured.

4. The method of claim 1, further comprising measuring the basal cortisol content prior to administration of the cortisol agonist.

5. A method of diagnosing an individual for being at risk of being affected by Metabolic Syndrome, said method comprising:

(a) administering a cortisol agonist to said individual;

(b) determining the inhibitory effect of said cortisol agonist on the production of cortisol by said individual between 3 and 24 hours after administering said cortisol agonist; and

(c) diagnosing said individual for being at risk of being affected by Metabolic Syndrome based on the inhibitory effect determined.

6. The method of claim 1, wherein said cortisol agonist is a synthetic cortisol analogue which has (i) a glucocorticoid effect or (ii) a mineral corticoid effect or (iii) both a glucocorticoid and a mineral corticoid effect.

7. The method of claim 6, wherein the cortisol agonist is dexamethasone.

8. The method of claim 7, wherein the dose of dexamethasone is between about 0.05 and about 0.5 mg.

9. The method of claim 8, wherein the dose of dexamethasone is between about 0.125 and about 0.5 mg.

10. The method of claim 1, wherein at least two different doses of said cortisol agonist are administered at intervals.

11. The method of claim 10, wherein said cortisol agonist is dexamethasone and said at least two different doses are 0.125 mg. and 0.5 mg.

12. A diagnostic kit comprising: (a) a dosage of a cortisol agonist present in an amount effective for determining a difference in the inhibitory effect of the autoproduction of cortisol in an individual having or at risk of having Metabolic Syndrome or one of its risk factors when compared with a person not so affected from 3 to 24 hours after administration of said agonist; and (b) means for measuring cortisol content in a clinical sample from 3 to 24 hours after administration of said agonist.

13. A method for diagnosing an individual for being at risk of being affected by at least one of the symptoms of the Metabolic Syndrome, said method comprising:

(a) administering a cortisol agonist to said individual;

(b) determining the inhibitory effect of said cortisol agonist on the production of cortisol by said individual between 3 and 24 hours after administering said cortisol agonist; and

(c) diagnosing said individual for Metabolic Syndrome based on the inhibitor effect determined.