

## Detection of visible and invisible cardiovascular changes on organ representation areas of face including eyebrows, upper & lower lips. Early detection of cancer from rapidly changing QRS-complex of ECG. Detection of borrelia burgdorferi infection of sa-node area and atriums from ECG as one of the major causes of atrial fibrillation which can lead to strokes.

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### Abstract:

Cardiovascular disease & cancer can be detected non-invasively and rapidly by the following 5 methods 1) Using organ representation area of the different parts of the face including eyebrows, ala of nose, upper & lower lips. The author found visible and invisible appearance of cancer related changes. Some of the visible changes are deep crease formation, protrusion, discoloration, change of the color of the hair of eyebrows to white color or disappearance of the hair. 2) Using Mouth, Hand & Foot Writing Form completed by patient which takes anywhere from 5~10 minutes, we can screen or make a diagnosis of cardiovascular disease, cancer and neuromuscular problems without having any information about the patient. 3) Using rapidly changing QRS-complex of ECG, cancer can be identified rapidly and when QRS-complex is more than 1.2 mV we can often detect cancer parameters. But, when QRS-complex is less than 1.2 mV we can often detect presence or absence of certain cancers. 4) Normally when Thymus gland immune system is very weak, organ representation area of the back of each hand becomes less negative. When thymus functions are normal, Thymosin  $\alpha$ 1 & Thymosin  $\beta$ 4 are usually anywhere between 5 ~ 50 ng. Values lower than 1 ng indicate an immune deficiency. 5) Using urine of less than 1 cc, we can detect presence or absence of cancer in less than 30 sec. and identify the type of cancer it will take additional 5-10 min for each different cancer. Since we often find multiple cancers, each additional cancer requires same additional time duration. By utilizing these methods cancer.

Structural changes with aging involve the myocardium, the cardiac conduction system, and the endocardium. There is a progressive degeneration of the cardiac structures with aging, including a loss of elasticity, fibrotic changes in the valves of the heart, and infiltration with amyloid. The age-associated structural characteristics that have the greatest impact involve

the contractility of the heart's left ventricular wall. The pumping capacity of the heart is reduced with age due to a variety of changes affecting the structure and function of the heart muscle.

For decades, it was thought that the heart undergoes atrophy with advancing age, but evidence suggests that, An age-related increase in the left ventricular posterior wall thickness of approximately 25% has been found between the second and the seventh decade. An increase in heart mass with aging, for the most part, is due to an increase in the average myocyte size, whereas the number of myocardial cells declines.

An age-related increase in valvular circumference has been reported in all four cardiac valves (aortic semilunar valve, semilunar valve, bicuspid valve, tricuspid valve), with the greatest changes occurring in the aortic valve (the valve between the left ventricle and the aorta) Calcific deposits frequently are present . one or more aortic valve cusp. These changes do not usually cause significant dysfunction, although in some older adults, severe aortic valvular stenosis and mitral valvular insufficiency are related to degenerative changes with age. Clinical heart murmurs are detected more frequently.

The decrease of elasticity of the arterial vessels with aging may result in chronic or residual increases in vessel diameter and vessel wall rigidity, which impair the function of the vessel. Factors that contribute to the increased wall thickening and stiffening in aging include increased collagen, reduced elastin, and calcification. One important set of changes involves the aorta, the wall of the aorta becomes less flexible, or shows an increase in wall stiffness, so that the blood leaving the left ventricle of the heart is faced by more resistance and cannot travel as far into the arteries. Age-associated changes also occur in the more peripheral vessels the walls of the arteries throughout the body become thicker so that they, too, are less flexible and stiffer. The walls of veins may become thicker with age because of an increase in connective

**Note:** hildhood- Most affected people have a family history of the disease, and some genetic mutations have been linked to hypertrophic cardiomyopathy.

tissue and calcium deposits. The valves also tend to become stiff and incompetent. Varicose veins develop. Because of low blood pressure in veins, these changes probably are not significant for cardiovascular function. They may be of concern because of the possibility of phlebitis and thrombus formation.

First, cardiac conduction is affected by the decrease in the number of pacemaker cells in the sinoatrial node with age. Beginning by age 60 there is a pronounced "falling out" or decrease, in the number of pacemaker cells in the sinoatrial node, and by age 75 less than 10% of the cell number found in the young adult remains. With advancing age, there is an increase in elastic and collagenous tissue in all parts of the conduction system. Fat accumulates around the sinoatrial node, sometimes producing a partial or complete separation of the node from the atrial musculature. The conduction time from the bundle of His to the ventricle is not altered. There is a leftward shift of the QRS axis with advancing age, perhaps reflecting a variable degree of fibrosis in the anterior fascicle of the left bundle branch as well as mild left ventricular hypertrophy. The S-T segment becomes flattened, and the amplitude of the T wave diminishes.

**Note:** childhood. Most affected people have a family history of the disease, and some genetic mutations have been linked to hypertrophic cardiomyopathy.