

## The Pulse Test

**Background:** The pulse test was developed by Arthur F. Coca, M.D. He was director of Lederle Laboratories for 17 years. He was Honorary President of the American Association of Immunologists. He was founder and first editor of the *Journal of Immunology*. He taught at Cornell, the University of Pennsylvania, and Post-Graduate studies at Columbia University. He was a member of the American Society for the Study of Allergy; the Society for Experimental Biology and Medicine; the Society of American Bacteriologists; the American Association for Cancer Research; the Harvey Society; the New Jersey Medical Society; the Society for the Study of Asthma and Allied Conditions; the William Pepper Medical Society, and Alpha Omega Alpha. He contributed to *Tice's Practice of Medicine* and served on the editorial boards of the *Journal of Allergy*, the *Journal of Investigative Dermatology*, and the *Journal of Applied Nutrition*. Lyle Stuart, publisher of over 2,500 titles writes, "...when asked, 'What is the most important book you've ever published?' I unhesitatingly reply, '*The Pulse Test* by Dr. Arthur Coca.'"

**Discovery of the Pulse Test:** Dr. Coca's wife was stricken with angina pectoris which incapacitated her for 3 years. Two heart specialists predicted her death within 5 years. The triggering event for the attack was a dose of morphine which raised her pulse over 180 (it was impossible to count beyond that). Dr. Coca commented on the rapid pulse and Mrs. Coca commented thoughtfully that her pulse raced after some meals. Dr. Coca began monitoring her pulse after single foods. Coca found that initially 3 foods raised her pulse over 68. Potato sent her pulse over 180. Coca refined his observations and eventually came up with a list of safe foods. She became free from heart pain and a number of other afflictions including migraine, colitis, attacks of dizziness and fainting, abnormal tiredness and indigestion. Dr. Coca realized the scope of his discovery and began to use it in his medical practice.

**Conditions Benefited:** Coca found that triggers for the following conditions could be detected with the use of his pulse test: recurrent headache, nervousness, migraine, dizziness, constipation, canker sores, heartburn, epilepsy, overweight, underweight, irritability, gastric ulcer, abdominal pain, gallbladder pain, gastric pain, nervous and emotional instability, abnormal tiredness, indigestion (vomiting, gas, nausea), neuralgia, sinusitis, hypertension, hives, heart attacks (angina), asthma, hemorrhoids, psychic depression, diabetes, chest pain, gastro-intestinal bleeding, conjunctivitis, nose bleed, and colitis.

**Types of Allergy:** Coca noted that certain types of allergic responses did not cause an increase in pulse rate. These included (1) the hay-fever group including asthma and eczema; (2) contact-dermatitis as with poison oak and poison ivy; (3) allergy of infection such as tuberculin-sensitivity; and (4) serum sickness as caused by injection of antitoxin. The pulse test did detect a wide range of reactions to foods and chemicals.

### Dr. Coca's Instructions for the Pulse Test

1. Stop smoking until tested.
2. Count the pulse for one minute
  - a. just before each meal,
  - b. three times after each meal at ½ hour intervals,
  - c. just before retiring,
  - d. and just after waking and before getting out of bed.
3. Record all items eaten at each meal.
4. Continue the pulse and dietary records for two or three days with usual meals.
5. Make single-food tests for two or more days. Begin after the before rising count and test a small portion of a single food every hour for 12-14 hours. Count the pulse before each portion and one-half hour after each single food. Avoid foods that are known to be problems.
6. Share the whole record with your physician at your first appointment.

### **Facts About the Pulse Test**

Dr. Coca found that any pulse over 84 was indicative of intolerance to a food or chemical. It was important to determine (1) the average level of the pulse, (2) the range of variation in the pulse (the maximum variation of a normal pulse is 16 beats), and (3) the slight variations in the maximal rate (usually about 2 beats). Accuracy of the count is important so counting for 15 seconds and multiplying was not satisfactory. There are pieces of equipment which can measure the pulse accurately. The normal low for an allergy prone person was never reached in the early days of testing. As exposure to allergens decreases the pulse will tend to decrease also. Coca saw pulses drop as low as 50. Some exposures produced fixed allergic responses which did not go away. Other allergic responses would fade away and a food could be eaten once a week with impunity. More frequent consumption would result in a restoration of the allergic response.

**Taking the Pulse:** The waking pulse test is taken before getting out of bed. All other pulse tests should be taken in a sitting position. “The most convenient spot is at the wrist an inch and a half above the base of the thumb. Place the left hand (if you are right-handed) in the lap with the palm facing up. Then place the first two fingers of the right hand on the wrist so that their average distance is about an inch and a half from the base of the thumb, and three quarters of an inch from the end of the wrist.”

Some veins may be seen under the surface of the skin, but these are not what you want to feel as there is just a steady flow of blood in them and no pulse. The pulse-beat is felt in the arteries, and there is an artery in the wrist at a lower depth than that of the visible veins.”

### **Coca’s Rules**

Dr. Coca established some general rules that usually apply to pulse testing.

1. A pulse that is higher when standing than sitting is indicative of allergic tension.
2. If 14 pulse-counts are taken a day and they do not vary more than two beats for three days in succession all food allergens have been avoided.
3. If the daily maximal pulse varies more than two beats you are allergic unless you have an infection.
4. A food can be considered non-allergenic if it does not raise the pulse at least 6 beats above the normal maximum.
5. House dust is normally a weaker allergen. If it causes pulse irregularity commonly eaten foods are probably not allergens.
6. Increased pulse from inhaled allergens is of shorter duration than pulse increase from foods.
7. Pulse increases that are not 6 beats above the normal maximum are probably from an inhalant or a recurrent reaction rather than a recently eaten food.
8. If the minimum pulse-rate does not regularly occur before rising one is usually allergic to house dust, mattress or pillows.
9. If you are not susceptible to colds you are probably allergic to few foods though you may have inhalant allergies.

For more information on the pulse test: Coca, Arthur F., *The Pulse Test*, New York: St. Martin’s Press, 1994. Originally published in 1956.

### **Dr. Doris Rapp’s “Big Five”**

Dr. Doris Rapp has focused on environmental illness. She uses five variables to determine if her patients are reacting to environmental pollutants or foods.

1. **The Pulse:** See above.
2. **Symptoms, behavior, and memory:** head or muscle aches, digestive pain, hoarseness, irritability, fatigue, hyperactivity, depression, mental fog, etc.
3. **Appearance:** Red earlobes, dark circles under the eyes, nose rubbing, puffiness, red cheeks, wiggly legs, throat clearing, clucking throat sounds.
4. **Writing and drawing:** Changes in the appearance and content of writing and drawing.
5. **Breathing:** Asthma, irritable or reactive airway disease, coughing after exercising or laughing. Changes in breathing capacity as measured by a Peak Flow Meter.

For more information on the Big Five: Rapp, Doris, *Is This Your Child’s World*, New York: Bantam Books, 1996, 45-114.

## Elimination Diets

An elimination diet is an attempt to remove all reactants from the environment including inhalants and foods which trigger responses. Depending on the degree of reactivity and the items to which one is reactive an elimination diet can easily be effective or it can be a frustrating experience. There are a number of elimination diets.

### Single Food Elimination Diet

If a single food is suspected to be a problem simply eliminate every form of that food for 7-12 days. After symptoms disappear consume a normal-sized portion of the food on an empty stomach (nothing has been eaten for at least four hours). The symptoms will often return within an hour. Sometimes the food must be eaten on two or more consecutive days to see a return of symptoms.

### Multiple Food Elimination Diet

Doris Rapp suggests a diet that avoids all gluten containing grains (wheat, rye, oats and barley), corn, citrus, canned and frozen fruits and vegetables, processed meats (breaded, dyed, treated with nitrites or sugar, etc.), all artificial drinks and dairy products, sugar, eggs, peanuts, mouthwashes and toothpastes, cough syrups, jellies and jams. Favorite foods are usually culprits and should be avoided. Most meats, vegetables, and fruits are fine. Some grains (rice, wild rice, teff, quinoa) are permitted. A major improvement in seven days suggests that the major problem is with foods. If improvement is only partial the probability is that non-food factors like dust, mold, pets, pollen, or chemical exposures are the culprits. If symptoms are worse during the first three days of an elimination diet this is usually caused by withdrawal symptoms. If symptoms are worse after the third day a food may have been added. Elimination diets are ineffective during infections.

### A Variation on the Elimination Diet

An elimination diet can be helpful in identification of foods to which one has sensitivities or allergic responses. A simple program is to consume only the following foods for 5 days: Lamb, pear (peeled), salmon, zucchini, rice, and string bean. Other fairly safe foods include artichoke, asparagus, broccoli, apricot, emu, ostrich, olive oil, lettuce, turkey, and buffalo. Remember that the greater the number of foods used in this washout period the greater the chance that one or more allergens will be introduced. Processed foods tend to have a great number of ingredients and those with common allergens will react to many processed foods.

The foods which are listed above are rarely consumed and rarely allergens. If you know you have a problem with one of these foods, you should replace it with another food with which there are no problems. This diet should only use sea salt as a condiment and purified water for a beverage.

After five days on this restricted diet the system is usually clean and sensitivity to allergens often *increases*. Foods can now be added back into the diet. Adding one food new per meal will often elicit responses if a food is a problem. If an allergic response takes place new foods should not be tested until the reaction clears. There is no point in testing foods which are known allergens.

### Common Allergens

- Gallbladder problems: Egg, pork, onion
- Sinus problems: Milk
- Digestive disturbance: Milk, gliadin found in wheat, rye, oats, barley, corn
- Pain and arthritis: Nightshades (potato, tomato, eggplant, bell pepper, cayenne pepper)
- Depression: Wheat (gliadin), sugar
- Headache: Coffee, wine, chocolate, alcohol, nitrates, monosodium glutamate, sausages, sour cream, cured meats, milk, food additives, cheese, and Nutrasweet.
- Other allergens: soy, beans, citrus, apple
- Problems with grains will often be associated with grass allergy (inhalant).
- Molds can be a real problem. These are found in old foods on supermarket shelves. High mold foods include soy sauce and other black sauces (*aspergillus niger*), chocolate, tea, commercial fruit juices, breads (dough conditioner) and tomato pastes. Those with mold sensitivity will often have problems with damp weather or humid environments.

For more on elimination diets and rotation diets: Rapp, Doris, *Is This Your Child's World*, New York: Bantam Books, 1996, 52-65.