
Sputum Induction

Download Patient Education

How to do a Sputum Induction

What is a sputum induction?

Sputum induction is a procedure to help a patient cough up secretions from the lungs more easily. The principle is to create extra moisture in the airways of the lungs. This will loosen and thin out secretions so they may be coughed up more easily.

National Jewish Health uses a sputum induction procedure to obtain a high quality sputum specimen.

What are the steps to the sputum induction procedure in a health care setting?

The sputum induction procedure is done initially in a health care setting. This procedure is performed in a negative pressure room or booth, or the practitioner performing the induction must wear a mask (N-95 if TB is even remotely suspected).

The patient should stop eating food and drinking liquids 2 hours before the sputum induction.

First, patients with lung disease (reactive airways, asthma, COPD or emphysema) should inhale a pre-treatment with a fast-acting bronchodilator. Albuterol or levalbuterol are examples. This will help stabilize and open up the airways. Patients who are taking Advair®, Symbicort®, Dulera® or Spiriva® may not need pre-treatment with an inhaled fast-acting bronchodilator.

Second, using any standard nebulizer, begin nebulization of hypertonic saline. At National Jewish Health we use 3%, 5%, 7% and usually, 10% hypertonic saline. Normal saline (0.9%) is generally not sufficient in producing a sputum specimen. The hypertonic saline irritates the airways, stimulating secretion of thin watery mucous. This process may take from 5 to more than 20 minutes, depending on the patient and the concentration of salt.

Every 5 minutes or so, have the patient perform huff coughs followed by a vigorous cough. Any secretions that are in the throat can be brought up with vigorous throat clearing.

Coaching the patient is very important to get good results in a timely manner. The secretions may seem thin, but with hypertonic induction, they will be thinner than the patient may be familiar with and should be collected. Collect the sputum in a sterile specimen cup.

Third, visually assess the specimen by viewing it into a light. The presence of plugs or mucous strands is a good indicator of bronchial product. The specimen may not have the usual coloration that the patient often sees, but that does not indicate that the specimen is inadequate. This process will often produce a much thinner result due to the induced copious thin secretions. Have the patient rest if necessary following the procedure. Assess the patient's breathing and have the patient self-

assess their breathing. If any distress or wheezing is present, do not hesitate to give an inhaled fast-acting bronchodilator, although in our experience, this will be a rare occurrence.

Fourth, label the specimen in accordance with CAP / JCAHO and the protocols of the lab you are using. Specimens for National Jewish Health should be handled following the instructions in the sputum mailer.

If you are being seen at National Jewish Health and have questions about the sputum induction procedure, please call 1-800-222-LUNG.

Visit our website for more information about support groups, clinical trials and lifestyle information.

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