

New Inhaled Insulin Investigated

The possibility of using inhaled insulin, rather than injectable insulin, has been studied since 1924, not long after insulin was first discovered. Although there was an inhaled insulin product (Exubera) available for about a year back in 2006 and 2007, the product did not become popular with patients or healthcare providers. The inhalation device was large, bulky, and difficult to use. Additionally, there were safety concerns associated with it. One pharmaceutical company is hoping these problems may be overcome by a new insulin technology.

Currently, a new way of delivering inhaled insulin to the lungs is being explored. This new technology, called Technosphere, relies upon the insulin protein being attached to special freeze-dried microparticles that are well suited for absorption from the lungs into the body. This Technosphere inhaled insulin is still being investigated, but its proposed trade name, if the Food and Drug Administration (FDA) approves it, is Afrezza.

In studies with Technosphere inhaled insulin, the insulin rapidly enters the blood stream,



reaching a maximal concentration in just 15 minutes and it is eliminated from the body faster than injectable insulin. These characteristics make it an ideal type of insulin to take with meals to control peaks in blood sugar levels that occur after eating. People who used Technosphere insulin had more positive attitudes about it compared to injectable insulin. The drug has been studied for as long as 4 years, with people continuing to benefit from it throughout this entire time. Unlike injectable insulins, the Technosphere inhaled insulin did not cause as much weight gain, and unlike the Exubera product, the new delivery device is smaller and easier to use.

Common side effects with Technosphere insulin included blood sugar going too low and cough. Unlike the previous Exubera preparation which could not be used by people with lung diseases or smokers, it seems that the Techno-

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FOPG9 DOI 10.1345/fop.1P055

sphere insulin can still be useful in these individuals. Further monitoring and follow up will be needed to verify that the drug is safe for use by smokers and those with lung conditions.

Many people with diabetes hesitate to start insulin because of concerns with injection pain, weight gain, and the way that injections will

change their quality of life. The new Technosphere inhaled insulin may alleviate many of those concerns and minimize the need for multiple daily injections. At this point, if the drug is approved by the FDA, it seems that this new technology will be most useful for controlling blood sugar around meal times.