It’s not an infection that sits on the tip of your tongue, but an effective treatment for respiratory syncytial virus (RSV) is an unmet medical need that has been shrugging off attempts to control it for many years.

Although the infection can manifest itself as nothing but a bad cold, rhinovirus, the pathogen that causes colds, is unrelated to RSV. And, unlike a cold, RSV can be fatal, especially in young children and older adults. There is no specific treatment or prevention for RSV infection, but it looks like this may change, thanks to a very promising vaccine that is made up of virus-like particles (VLPs).

VLPs may sound familiar, since they are the rage in new vaccine technology. They are also being used in the development of vaccines against norovirus [1] (the stomach flu,) and show great promise in finally attaining the long sought-after universal flu vaccine something that we discussed recently [2]:

VLPs are artificial constructs that contain only the shell of the virus, which produces the same (or similar) antigens that are present in the actual virus. But, unlike many other vaccines, VLPs do not contain any virus and therefore cannot be infectious (this is very rare even with traditional vaccines). Nor do they even require a sample of the virus. They are typically made in mammalian or plant cells using the DNA sequence of the actual virus.

Virtually all children have had an RSV infection at some point in their lives. In most cases it is similar to a bad cold, but not always. According to the CDC [3], the virus is responsible for:

- 57,527 hospitalizations among children younger than 5 years old
- 2.1 million outpatient visits among children younger than 5 years old
177,000 hospitalizations and 14,000 deaths among adults older than 65 years

To put this in perspective, the morbidity and mortality of RSV is virtually identical to that of influenza. This is far from trivial.

But, it looks like help may be on the way: Novavax, a Maryland-based biopharmaceutical company is leading the pack. Their Phase II vaccine has been shown to prevent 46 percent of symptomatic RSV infections in older adults, and a 64 percent reduction in severe infection.

Andrew Pavia, speaking for Infectious Diseases Society of America, said, "It could be a major breakthrough [but] It's not time to break out the champagne."

About one-third of new drugs that make it through Phase II trials go down in flames during Phase III. They shouldn't be picking out the color of their new Lexus quite yet.