

**Q:** Dr. Esdaile referred to the term biologics. Could you please explain the term and provide more information about them?

**Dr. Esdaile:** Normally doctors hand out pills that we call drugs, for example prednisone or plaquenil. They are a small chemical molecule and they do many things. For instance, prednisone we know is a great anti-inflammatory and is very good at stopping the manifestations of lupus, like no other drug will. But it also does other things – it alters your blood sugar, your cholesterol, your blood pressure, it changes your skin, it has effects on the bones, the eyes, and a whole list of things. So clearly it is a bit of a blenderbuss that that we fire off to control the very bad inflammation.

The biologics are different in that they tend to be very large molecules. Sometimes they are antibodies directed at a single molecule in the body. And the ones that we have the most experience with are those used in rheumatoid arthritis, called the anti-TNF. It attacks the single TNF molecule. So they are quite different from our usual drugs in that they alter a key molecule, and if this key molecule is involved in a cascade of reactions causing the disease, or the manifestations of the disease, you can shut the tap off. So that is the theory and when they work they can be dramatically effective. And where we have the experience is in rheumatoid arthritis where people have described that they feel better during the first treatment than they have in years. When I first heard this I really did not believe it, but now I have heard it enough to believe it. We don't have these drugs licensed yet for treating lupus but biologics are involved in intense study.