



## 14.1 PLLA as a Suture Material

Once it is discovered that volume loss is the most crucial element of aging, various materials were used to create volume in the face.

PLLA (poly-L-lactic acid: Sculptra®) is used as a material for volumizing. PLLA can be biodegraded and it is an adequate material for the living body. In general, after being inserted into the body, it forms collagen, and it is known to be sustained for 2 years. After being inserted into the body, PLLA forms type 1 collagen and type 3 collagen, and it is known to cause almost no or very small amount of inflammatory reaction to the surrounding tissues.

Kulkarni and colleagues also have stated that when PLLA was injected into the subcutaneous tissue, there is a very weak inflammatory response

initially, but it disappears as time goes on. Gogolewski et al. also observed changes after injecting PLLA. It was stated that as PLLA was decomposed, collagen settlement increased but that no acute inflammatory response was observed.

Hyaluronic acid ingredient can also make some collagen around the injected area, but this differs from what is made by the PLLA ingredient. Volume formation using a hyaluronic acid filler is mostly by the hyaluronic acid itself and partially by newly formed collagen. On the other hand, PLLA ingredients differ in that they are decomposed slowly over a period of 2 years and collagens mostly fill the space.