

Medical data is for informational purposes only. You should always consult your family physician, or one of our referral physicians prior to treatment.



®

Supplement to
The Art of Getting Well
Cartilage Replacement:
The Polymer Age

Anthony di Fabio.

Copyright 1998

All rights reserved by the The Roger Wyburn-Mason and Jack M. Blount
Foundation for Eradication of Rheumatoid Disease

AKA The Arthritis Trust of America®

7376 Walker Road, Fairview, TN 37062

Creeking, Painful Joints

We estimate that perhaps as many as 56,000,000 Americans need cartilage replacement, usually from some form of active arthritis such as Osteoarthritis or Rheumatoid Disease, including Rheumatoid Arthritis.

Although nutritional factors can be a dominating causative source, there are all too many reports of the ineffectiveness of chondroitin sulfate and glucosamine sulfate, with or without special herbs and essential fatty acids, to believe that these ingredients alone are the final answer.

Don't take the above statement wrong. We were the first in the nation to report on the importance of glucosamine sulfate and chondroitins through one of our medical seminars via Luke Bucci, Ph.D., and his research. (See "Prevention and Treatment of Osteoarthritis," <http://www.arthritis-trust.org>). The many letters we've received describing the ineffectiveness of these two ingredients, despite public relations hoopla, has led to formulation of this general answer, when asked: "We believe that glucosamine sulfate and chondroitin sulfate are excellent nutritional supplements in most cases, and will actually improve some arthritic conditions, particularly if these are among the nutrients lacking."

In most of us though, no matter the cause(s), cartilage simply disappears little by little until joints creek, and deathly pains spring alive from their creeking.

So, what can be done when cartilage is gone?

Normal Solution to Lessened or Absent Cartilage

Alternative Medical Methods

Bone that rubs on bone without cartilage to cushion their actions creates a clicking or grating sound, and often inflammation at the joint.

F. Batmangheildj, M.D. maintains that it is the lack of sufficient water intake (plus appropriate salt intake) that causes the cushioning effect of cartilage to be reduced, thus leading to joint problems. (See *Prevent Arthritis and Cure Back Pain; How to Deal With Back Pain & Rheumatoid Joint Pains* and *Your Bodies Many Cries for Water*, <http://www.arthritis-trust.org>.)

Morton Walker, D.P.M. and William J. Faber, D.O. and Ross A. Hauser, M.D. and Marion A. Hauser, M.S., R. D., maintain that it is often lax or torn ligaments and tendons that create unstable joints, thus leading to a wearing away of cartilage. The body's attempt to compensate for this instability also may lead to calcium spurs that cause additional joint immobility, and pain. (See *Pain*,

Pain Go Away and *Prolo Your Arthritis Pain Away*, <http://arthritis-trust.org>.)

Traditional Medical Methods

Before a joint becomes totally unusable, traditional medical advice recommends an "unloader" brace. This is often a hi-tech-age combination of titanium and space-age carbon straps shaped into an exo-skeleton around the unstable joint. The idea is to take the load off of the joint, and transfer weight to the exo-skeleton around the joint.

Many people are helped by this expensive device (\$1,100 or more), but many also find it more of a psychological boost than of immediate joint benefit, as it was with me.

When the joint becomes unusable, due to pain and inability to function, traditional orthopedic advice is to have a joint replacement. A costly, rather serious operation is performed which cuts into the joint bone, and either splices onto the bone, or replaces the socket entirely, with metal and/or plastic replacements. This frightening procedure has been performed by the hundreds of thousands, and has also been a boon to hundreds of thousands, with some notable failures. It is also a boon financially to those who specialize in this operation.

One failure I have in mind is the hip replacement made on one of our founders, Jack M. Blount, M.D., who is also one of the two people whose name graces our legal company name. (See *Rheumatoid Disease Cured at Last*, <http://www.arthritis-trust.org>.)

Dr. Blount was bedridden from Rheumatoid Arthritis as his hip had deteriorated to the point where he could no longer walk. He decided to have a hip replacement which involved a ball and socket arrangement that was embedded in the remainder of his large leg bone and his hip.

His first operation was a great success, but he limped terribly, because the doctor had not measured distances correctly, and one leg was now shorter than the other, requiring built up shoes and uneven trouser legs.

After a second operation, this flaw was fixed to some extent, but the most that could be said about its success was that Dr. Blount was not bedridden again until after his second retirement, when additional health factors became apparent.

Others, of course, have great success with replacing finger joints, and other joints of the body.

The major problem with these joint replacements, aside from the trauma, lengthy recovery, pain and cost, is that they never function as well as the original joint, and also, according to materials used in forming the artificial joint and the amount of use made of the joint, may also need replacement periodically -- more money, trauma, lengthy recovery, pain and cost!

Needless to say, joint replacement is a medical procedure not to be taken lightly!

Better Things for Better Living Through Chemistry

E.I. du Pont de Nemours chemical company (and munitions manufacturer stemming from our revolutionary days) may have been the first to coin the phrase of "Better Things for Better Living Through Chemistry." They, after all, helped the ladies get rid of stocking seams and sagging silk, introducing the age of stretchable Nylon, cellophane wrappings for our foods, and many other plastics.

Since those early 1940s developments and productions of plastics has become a fantastic engineering process, wherein it has been said by some in the business that "any and all parts of a gigantic building can now be made of plastics were one willing to pay the price, such is the knowledge we now have of formulating the desired material characteristics on demand."

Polymerized Cartilage Replacement

Medical data is for informational purposes only. You should always consult your family physician, or one of our referral physicians prior to treatment.

Let's say that you're in your sixties or seventies, and you have lost your cartilage in the knee, and you want it replaced like new. What can you do?

Well, one solution is to take some cells from those tissues that form cartilage, and clone them in the laboratory, and then add these clones to those in the knee, allowing time for regrowth.

Good idea, right?

Wrong! Unfortunately this has worked to date only for those who were clever enough to have had cells removed about fifty or sixty years ago, and kept sterile and alive in a laboratory all through the years of our mis-adventures.

There is -- perhaps -- an adequate substitute, however.

Advanced Bio-Surfaces, Inc. of Minnetonka, MN has requested permission from the FDA for a series of clinical trials to replace cartilage in joints by use of a polyurethane material that can be introduced into the joint with minimally invasive arthroscopy, a device that sort of "peeks" into the joint through a small slit made in the skin and muscle at the joint.

The polyurethane is then flowed into two anchor points made at opposite sides of the joint (two different bones) in the form of cones.

The polymer polymerizes (gets hardened) producing a mechanical lock in the joint in 3-5 minutes.

The joint -- such as the leg -- is then extended bringing one part (femoral condyle) in contact with the other part (tibial plateau), according to Dr. Jeffrey C. Felt, Chairman and Chief Technical Officer of Advanced Bio-Surfaces, Inc. "This shapes the polymer and gives us a congruent surface with the femoral condyle so that we have, in a sense, a custom-formed polymer implant."

"The patented procedure forms a custom fit, biocompatible joint surface intended to simulate certain characteristics of human cartilage, corrects angular deformity, and thereby gives pain relief."

Research conducted on 70 sheep have so far demonstrated that the polymer is biocompatible, and the tissue and bone adjacent to the polymer has responded very well, showing no signs of inflammation, Dr. Felt reported. Neither was synovitis (inflammation of the membrane surrounding the joint) observed, nor any abnormalities in routine chemistries or tissue specimens taken from multiple organs and lymph nodes.

After 12 months follow-up, the polymer seems to be holding up very well in sheep. Bench testing (in the laboratory) has shown that the material should be able to withstand at least 10 years of activity in a 50-year-old person, which, to say the least, is a remarkable period for such a slight operation.

Past and Coming Trials

In addition to sheep, and human cadavers, in 1997 six Norwegian patients volunteered for this process. European trials will be expanded to perform more knee joint restorations in several European countries, and the clinical data obtained will be used to support commercial marketing in Europe. This new data will be used to support pre-market approval submissions to the FDA, after which commercial marketing can begin in the United States.

At this writing Advanced Bio-Surfaces, Inc. is planning to set up 15-20 sites in the United States for clinical trials under review by the FDA.

Joints to be Replaced in the Future

Advanced Bio-Surfaces, Inc. Joint Restoration system intends to pursue other "on site" (in-the-joint) cured polymer systems, such as the spine, hip, shoulder, great toe, the small joints of the hand and the temporal mandibular joint (TMJ).

Our Recommendations

Literature and books referenced in our website ([http://](http://www.arthritistrust.org)

www.arthritistrust.org) adequately cover many of the factors that lead to joint erosion: nutritional defects, candidiasis, food allergies, foci of infection, pollution, mercury poisoning, pesticide and herbicide accumulations, lack of water (and salt), stretched or torn tendons and ligaments, thyroid inadequacies, and so on.

After all the treatments based on these various factors have been pursued, and the joint has eroded to a point of mal-function and pain, Advanced Bio-Surfaces, Inc. may have very well developed a brilliant, effective strategy for solving a problem that is frustrating an increasing number of millions of humans.

Keep your eye on this procedure. It looks as though it is a sure winner after all else has failed!

Advanced Bio-Surfaces, Inc., 5909 Baker Road, Suite 550, Minnetonka, MN 55345; Phone (612) 912-5400; Fax (612) 912-5410; For doctors: Attn: Jeffrey C. Felt, M.D., Chairman and Chief Technical Officer or William J. Arnold, M.D., Executive Vice President and Medical Director.