

## Acellular Dermal Matrix (ADM) Information Sheet

Any plastic surgery operation is a very personal choice and understandably, there are a number of questions that naturally arise. This information sheet is a general guide for patients undergoing surgery that may involve the use of an Acellular Dermal Matrix (ADM) under the care of Mr Paul Harris. It should answer some questions that you might have about this material and your operation, although you may have already discussed many of the points below with Mr Harris at your consultation.

There are many additional factors that can impact upon your individual operation, your recovery and the long-term result. Some of these factors include your overall health, previous surgery, any bleeding tendencies that you have and your healing capabilities, some of which will be affected by smoking, alcohol and various medications. Such issues that are specific to you need to be discussed further and are not covered here. Please feel free to ask Mr Harris any additional questions before you sign the consent form.

### ***What is ADM?***

ADM is a natural tissue that has had its cells removed to leave behind collagen and extracellular matrix components. ADM is like a scaffold network that provides support and acts as a framework for the patient's tissues to grow into. Thin sheets of ADM were initially developed for use in burn patients as a template for skin replacement. Their use was then extended to a more structural function as a natural repair layer in the abdominal wall rather than synthetic mesh. More recently ADM been used in implant-based breast reconstruction and augmentation procedures. In the USA over 60% of implant reconstructions make use of ADMs. ADM use in the UK is not as prevalent but is on the increase. There are a number of commercially available ADMs that differ by donor tissue (human, porcine, bovine) and by the processes they undergo to include separation of tissues, cell removal, and disinfection. Each of these steps can alter the architecture of the ADM and its interaction with your body.

### ***How is ADM produced?***

Decellularisation is required for all ADMs. Cells must be removed to prevent an immune reaction or rejection by the patient receiving the product. The detergents used to achieve this differ by product. Dehydration is the next step, making the tissue easier to handle, improving shelf life and reducing loss of some intrinsic growth factors. ADMs can be dehydrated either through freeze-drying or by vacuum pressing. There is no clear evidence in the literature that one type of sterilisation is better than any other although if a preservative is used, it should be thoroughly washed away at the time of surgery to prevent a reaction.

### ***What happens when it is placed in the body?***

If successful, once the ADM has been placed inside the body, you will incorporate the new tissue framework as if it belonged to you with rapid new blood vessel and tissue growth. There are no known long term problems associated with ADM use once it becomes fully incorporated.

### ***What are the uses of ADM?***

Mr Harris uses ADM at the time of immediate breast reconstruction following a mastectomy in combination with implants, for abdominal wall hernia repair or to improve the soft tissue coverage of a cosmetic breast augmentation. Although several products are available in the UK, Mr Harris preferentially uses a product known as Surgimend® which is derived from bovine calf skin. It is freeze-dried and does not have any preservative.

Several other uses are described by surgeons in other areas of surgery including orthopaedics, burn surgery and dental surgery.

### ***How is ADM used in breast reconstruction?***

The traditional approach to an implant-based breast reconstruction at the time of mastectomy for breast cancer, has been to insert a deflated implant (tissue expander) under the muscle and collapse the skin down on top of this. Over time, this expander is blown up by injection of saline into the implant until the original breast size is achieved and the skin has been stretched out again. A second operation is then undertaken to exchange the expander implant to a more permanent device.

ADM may be used to convert this two-stage prolonged treatment journey to a one-step reconstruction. Instead of expanding the chest muscle and breast skin over a period of several weeks after your mastectomy to create a pocket big enough to hold an implant, Mr Harris will stitch a patch of ADM inside the breast skin to the sides of the muscle and along the inframammary fold. This creates a pocket without delay and also covers the implant edges very well.

Implant-based reconstruction accounts for 30–50% of immediate reconstructions following mastectomy in the UK. Complication rates are high and include capsular contracture, rippling and movement of the implant. ADM use results in a better appearance (better inframammary fold definition and a more natural look) and is less time consuming in the right patients. There is evidence that the early complication rate from ADM use is higher when compared to the more traditional approach of a two-stage technique using a tissue expander. Nevertheless, Mr Harris feels that the advantages are such as to outweigh this small increase in early post-operative problems. These complications can also be lessened by attention to detail and careful patient selection. Hence not all patients undergoing implant-based breast reconstruction are selected for ADM use.

### ***Am I a suitable candidate?***

Smokers and patients with a body mass index (BMI) greater than 30 have higher rates of complication and implant failure, and are not ideal candidates. The breast skin of patients who have had previous radiotherapy will not integrate well into an ADM and hence the use of these materials in such patients is extremely high-risk.

Patients requiring post-operative chest wall radiotherapy have a four-fold increase in post-operative complications including an increased risk of capsular contracture. However, there is some evidence that ADM may reduce the severity of capsular contracture in these patients.

Mr Harris will discuss the pros and cons of implant surgery and the possibility of a one step surgical intervention using ADM with you.

### ***What are the possible post-operative complications?***

Initial reports indicated higher rates of post-operative infection, breast skin necrosis and post-operative seroma (fluid collection) when using ADM. The most common post-operative complication is infection with up to 25% of patients needing antibiotics in the three months following surgery. Up to 10% of patients need to return to theatre for local complications (wound infection or skin flap necrosis, and haematoma) and another 8% for implant loss. However, more recent results have shown that appropriate surgical technique and good patient choice give better outcomes.

***What precautions should I take before surgery?***

Pre-operatively no aspirin or medicine containing aspirin should be taken for one week. If you smoke you should cut down at least three weeks before surgery and stop completely three days before surgery to try and minimise postoperative complications, which are more common in smokers. It is important that you do not start smoking again until all of your wounds are fully healed.

***What will happen before the operation?***

When you arrive in hospital, you will be seen by a nurse who will talk to you about your general health and examine you to make sure that you are fit for surgery. They may also arrange for you to have some blood tests, a heart trace (ECG) and a chest X-ray. An anaesthetist will visit you to discuss the anaesthetic. Mr Harris will also come and discuss your surgery in detail with you. He will often take some pre-operative photographs and draw some markings to guide the surgery. It is important that you do not wash these lines off. Breast reconstruction under Mr Harris' care is routinely carried out with an oncological breast surgeon. It is important that you have also seen the breast surgeon before the operation and that all the potential complications of the mastectomy and any axillary surgery have been discussed.

You will then be asked to sign a consent form. Make sure that you fully understand the consequences of the surgery prior to signing this. Signing this form does not take any of your normal rights away, it merely states that Mr Harris has explained the operation to you and that you have discussed the anaesthesia with an anaesthetist.

## The Practice

Mr Harris practices from 5 Devonshire Place in Central London, where he also performs minor outpatient procedures. Assisted by his regular anaesthetist, he operates at The London Clinic (<http://www.thelondonclinic.com>) and at The Royal Marsden Hospital, Fulham (<http://www.royalmarsden.nhs.uk>). He also consults and operates at Parkside Hospital, Wimbledon (<http://www.parkside-hospital.co.uk>). All provide a full range of medical support services.

### ***Main correspondence, appointments and administration***

Many patients are referred by their General Practitioner. You may, however, arrange your own appointment with Mr Harris, without referral.

Please refer all correspondence to:

5 Devonshire Place  
London  
W1G 6HL

For appointments please contact:  
[appointments@paulharrisplasticsurgeon.co.uk](mailto:appointments@paulharrisplasticsurgeon.co.uk), tel: 020 7927 6520

For information and payments:  
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