

# Abdominoplasty

## Introduction

An abdominoplasty (tummy tuck) is an operation designed to remove loose excess skin and fat from the front of the abdomen, usually below the level of the belly button (umbilicus) but sometimes across the upper abdomen as well. In addition, an important part of the operation is tightening of the rectus muscles (“six-pack” muscles) of the abdomen to provide further support and to improve the abdominal wall contour. The aim of the surgery is to improve the appearance and shape of the abdomen as well as repair muscle separation and reduce skin excess. An abdominoplasty may be further enhanced with additional procedures such as liposuction targeted to specific areas or if laxity extends around the back with lower body lift. Abdominoplasty is often performed to restore the abdomen after pregnancy or after significant weight loss. In both of these situations, separation of the rectus muscles (rectus diastasis) and excess loose skin that often overhangs frequently develop. Restorative abdominoplasty can help with core strength training, fit of clothing and to restore confidence about an area that many are very conscious about after pregnancy and weight loss. In addition, if you suffer from intertrigo or skin irritation and infections in abdominal skin folds where they overhang, abdominoplasty will help this considerably. Abdominoplasty surgery has also been shown to have a positive impact on lower back pain and urinary incontinence (due to its impact on the pelvic floor).

## What should I think about prior to my consultation?

Before your consultation, you should think about what bothers you about your abdomen and what you are hoping to achieve from an abdominoplasty. Points to consider may include:

- Is my weight steady or am I continuing to lose weight as part of a diet or weight loss programme? If so, it is better to postpone surgery until you are at your goal weight and your weight has plateaued for around 6 months. This is especially important if you have had bariatric surgery (a gastric band or a bypass operation), or are taking weight loss injections.
- Why am I thinking of having an abdominoplasty at this time in my life? You should not consider having aesthetic surgery if you are going through any instability in your personal circumstances.

- What clothes would I like to wear after my abdominoplasty and how would they look?
- If you have not finished your family and are considering trying to become pregnant in the near future, an abdominoplasty is best postponed until your family is complete.
- When is the best time for me to undergo abdominoplasty surgery so that I am able to recover afterwards in the best possible way?

### **What are the limitations of abdominoplasty?**

The outcome of your operation will be partly determined by the shape of your abdomen.

- If you are very slim and have thin tissues, but an abdominal bulge (typically after multiple pregnancies), there is a chance you may be able to feel some of the internal stitches underneath your skin.
- The scar of an abdominoplasty is designed to lie low, so it will be hidden behind underwear and bikinis in the future. However, the scar may be slightly asymmetrical and may not be perfectly even - if this is a problem for you, you may not wish to proceed with surgery.
- If you have a short frame with very little space between your ribcage and hip bones, the result of an abdominoplasty will not be as good as if you have a larger gap, as there will be less of a possibility of creating a distinct waist.
- We are all asymmetric to a degree - the left and right halves of our bodies are not identical. Following abdominoplasty, certain asymmetries you may not have been aware of prior to surgery may become apparent.
- Stretch marks, that are higher up on your abdomen or not in the area of skin that will be removed, will still be present after surgery although they are usually moved lower down and therefore less visible e.g. in underwear or swimwear.
- If you are having surgery having lost a great deal of weight, it may be more appropriate to have an alternative operation such as a belt lipectomy or a lower body lift (surgery, and consequently the scar, go all the way around the body) as an abdominoplasty alone may not be sufficient to address all the areas of redundant tissue. Another option that may be considered is a 270 degree abdominoplasty. If proceeding with an abdominoplasty, one of the more extensive types (see below) may be recommended instead of a standard abdominoplasty.
- If you gain or lose a lot of weight after having an abdominoplasty, this can affect the result in the long term.

## **What incision (scar) is used for an abdominoplasty?**

### **Lower abdominal transverse scar & periumbilical scar**

The scar for an abdominoplasty goes from hip to hip, at a level around the upper part of the pubic hairline. It is usually slightly lower in the middle and comes up slightly either side. The scar is always red initially while it matures over several months after surgery before fading. It is at its least obvious from about 2 years onwards but has completed most of its fading after 1 year.

There is also a scar around your umbilicus (belly button) - this is necessary as the umbilicus is fixed on a stalk deep to your tummy wall. Once the excess skin and fat has been removed and the upper part of your abdominal skin is pulled down, the umbilicus must be re-sited in a new position by bringing it through it through the newly re-positioned and tightened skin.

### **Additional short vertical scar lower midline**

Occasionally there is a vertical scar low down in the midline. This is necessary when there is not enough loose tissue between the umbilicus and the pubic hairline to remove all the skin and fat in this area. A small vertical scar low in the abdomen where the umbilicus previously came out through the skin may be needed to get the best result and a safe result. It is preferable to accept the small vertical scar low down in the middle, above the main scar, rather than the alternative of the whole long scar sitting higher on the abdomen.

### **Additional full length vertical midline scar (Fleur de lis abdominoplasty)**

Some people have a lot of loose tissue that will not be fully dealt with by simply pulling the abdominal skin down. To get the best result, they need the tissues to be pulled in from the side as well and the excess skin and fat removed from the central abdomen as well. This requires a vertical scar down the full length of the midline of the abdomen in the line of the umbilicus in addition to the lower abdominal transverse scar. This type of abdominoplasty is known as a fleur de lis (or fleur de lys) abdominoplasty.

### **Lower abdominal transverse scar alone**

In some situations, a “mini” abdominoplasty may be performed. In this case, the umbilicus is left alone and has no scar and a smaller amount of skin between the pubic hair and the umbilicus is removed. Consequently, the umbilicus is lowered after this procedure. A mini abdominoplasty is only suitable for a small group of people.

## **Can liposuction be performed at the same time?**

Absolutely – in fact, to achieve the best possible result, liposuction is often recommended as part of the abdominoplasty procedure. It is particularly useful for improving the abdominal contour at the waist and can improve definition of other areas of the abdomen (such as providing more of a toned and athletic appearance to the middle of the abdomen). As it is an additional procedure, which adds on further time to the surgery, an extra cost is involved.

## **What types of abdominoplasty are there?**

### **Standard (full) abdominoplasty**

A standard abdominoplasty removes the excess skin and fat from the lower abdomen, usually the tissue between the umbilicus (belly button) and the upper pubic hairline. The upper abdominal skin is lifted up and pulled down and the underlying rectus muscles (“6-pack” muscles) are tightened. Excess skin is then removed from the lower abdomen. The umbilicus is repositioned through the new skin that overlies it. The overall effect of this is a flatter, tighter tummy with no loose skin folds at the bottom and significantly less bulging of the tissues. The scar runs from hip to hip across the upper pubic hairline with a small scar around the umbilicus as well. If you have a Caesarean section surgical scar already, this scar will normally be removed as part of the procedure. The lower scar will extend just beyond the limit of the loose or overhanging skin at each side of your abdomen.

If you do not have quite enough skin to remove between the lower scar and the umbilicus, a small vertical scar (either arising from the centre of the main scar or sitting between the new belly button and the main scar) may be left, at the site of your previous belly button. If this may be a possibility, your plastic surgeon will discuss it with you during your consultation.

The mons pubis is the pubic area covered by hair. It often sags with weight loss and ageing and can bulge due to excess fat. It will be lifted or pulled upward by the abdominoplasty. In very extensive mons laxity and sagging, additional specific mons reshaping as part of a mons lift is needed.

### **Lipoabdominoplasty**

To achieve the best possible result, liposuction is often recommended as part of the abdominoplasty procedure. A standard abdominoplasty is carried out as usual, but liposuction is done as well. Liposuction is particularly useful for improving the abdominal

contour at the waist and can improve definition of other areas of the abdomen (such as providing more of a toned and athletic appearance to the middle of the abdomen and reducing the thickness of the upper abdominal skin and fat that is not being removed as part of the abdominoplasty surgery). Liposuction can also help contour the hip area and reduce a bulging mons pubis.

### **270° abdominoplasty**

A 270° abdominoplasty is a type of extended abdominoplasty that tightens the flanks (sides) as well as the front of the abdomen. The scars go further round the back (270° around your body), but do not continue all the way around. This is a more extensive operation and involves turning you on to each side during the operation, to remove the flank tissue and tighten this area.

### **Mini abdominoplasty**

In a mini abdominoplasty, the umbilicus is left alone and a smaller amount of skin and fat between the pubic hair and the umbilicus is removed. Consequently, the umbilicus can be lowered after this procedure. Furthermore, there is no scar around the belly button in a mini-abdominoplasty. A mini-abdominoplasty is only suitable for a small group of patients. It does not allow for tightening of the abdominal muscles and will not improve the appearance of the central and upper abdomen.

### **Fleur de lis/fleur de lys abdominoplasty**

Some people have a lot of loose tissue that will not be fully dealt with by pulling the abdominal skin down and removing the excess from the lower abdomen. To get the best result, they need the tissues to be pulled in from the sides and the excess skin and fat removed from the central abdomen as well as from the lower abdomen as in a standard abdominoplasty. This requires a vertical scar along the full length of the abdominal midline in the line of the umbilicus in addition to the lower abdominal scar from hip to hip, and the scar around the umbilicus. This type of abdominoplasty is known as a Fleur de Lis abdominoplasty. The underlying rectus muscles are tightened in the same manner as in a standard abdominoplasty to provide further support and improve the abdominal contour as well.

### **Reverse abdominoplasty**

In this operation, instead of having a scar at the bottom of the abdomen, the scar is placed to lie under the breast crease and between the breasts. This operation is usually only performed in certain situations, for example after someone has already had a traditional abdominoplasty but still has a degree of upper abdominal skin and fat excess.

Furthermore, it is an operation often performed on people who already have scars under their breasts (for example those who have had a breast reduction). A reverse abdominoplasty has also been described as an operation to augment the breasts, by using the abdominal tissue that would normally be discarded as natural breast implants.

### **Belt lipectomy and lower body lift**

Although not an abdominoplasty, a belt lipectomy or circumferential lower body lift is also available. These operations are best suited to those individuals who have lost a lot of weight (often following gastric bypass or gastric banding procedures). They are more extensive operations in which excess skin and fat is removed all the way around the body. (An abdominoplasty primarily treats the front of the trunk and will not address loose skin and fat that continues around into the flanks and back.) They are very effective ways of dealing with the redundant skin and fat, and if appropriate your plastic surgeon will discuss these alternatives with you. A similar procedure as a standard or fleur de lis abdominoplasty is performed on the front your trunk but in addition, a lower back lift or removal of excess tissue from your lower back is also done. Sometimes a buttock lift is also done in addition at the same time. As they are more extensive surgeries, you will need to allow a longer time to recover after undergoing these procedures and need to be aware that the early recovery can be more difficult as incisions and healing are happening around your entire trunk.

### **Use of abdominal scaffold or mesh**

This is not routinely needed for abdominoplasty surgery but occasionally when greater than usual weakness and separation of the abdominal wall muscles is present or a bulge has recurred after a previous abdominoplasty muscle repair, or suture repair (albeit strong and multi-layered) is not enough to maintain the abdominal wall repair. In this situation, synthetic scaffolds or meshes may be needed. If so, this will be discussed with you in advance.

## **THE CONSULTATION**

During your consultation, we will endeavour to put you at ease and start by finding out about your motivations for seeking abdominoplasty surgery. In addition to clearly establishing the various areas of your abdomen that you may be unhappy with, we will take a thorough medical history, including any history of high blood pressure, diabetes, other medical conditions, smoking or nicotine use and records of any medication you may be taking and any allergies you may have.

## **What does your plastic surgeon examine for during the consultation?**

A female chaperone is always available to be present during your examination. Your plastic surgeon will ask you to get undressed down to your underwear. They will need to see your full abdomen from the lower half of your ribcage or just beneath your breasts to the bottom of your pubic hair area. They will make the following assessments of your abdomen:

- Your general shape and skin quality
- Any asymmetry to your abdomen (this may be more pronounced if you have a degree of curvature of the spine)
- Any previous scars from operations, including Caesarean section scars
- How much loose skin and fat you have - you will usually have to bend forward to allow your tummy to hang out for this part of the examination
- The amount of internal (visceral) fat that you have
- If your loose skin and fat extends around your flanks into your back
- The tone and position of your tummy muscles (rectus abdominis muscles)
- Any evidence of abdominal wall hernia or bulges
- The quality and elasticity of your abdominal skin (stretch marks, thickness, scars)
- Your weight

## **Photography**

Pre-operative photographs from a variety of standardised positions are always taken. These can be referred to with you during your consultation to point out various attributes of your abdomen, as well as forming an essential part of your medical records. Your face will not appear in any of the photographs, and your consent for the photographs will be obtained.

## **Surgical and post-operative garments**

Following abdominoplasty surgery, it is highly recommended that you wear a support garment for as much of the day and night as possible ideally only removing it for showering (23 hours per day with removal for approximately one hour to shower). This helps to minimise the amount of fluid that may collect in the abdomen (known as a seroma - see below). The garments may be purchased from a number of different suppliers, which our Purity Bridge nursing team advise you on as well as the type of garment suitable for your surgery and sizing this properly ahead of surgery. The garments are usually worn for about 6 weeks following surgery. This is particularly important if you have undergone liposuction in addition to your abdominoplasty procedure.

## **THE ABDOMINOPLASTY PROCEDURE ITSELF**

### **Before surgery**

We will arrange an appointment with our specialist nurses to help prepare you for surgery. They will discuss how to prepare beforehand, what to expect afterwards and how to look after yourself in the early recovery. You will be fitted for a post-surgery bra. If your surgery is under general anaesthesia (usually the case for abdominoplasty), you will also have a preassessment with the hospital where your surgery is planned or combined with your specialist nurse appointment if your surgery is at Purity Bridge. We will also send you surgery consent forms to complete.

### **What happens when I get to hospital or clinic?**

When you arrive at the hospital or clinic, a nurse will go through the health checks needed on the day of surgery. You will be asked to change into a hospital gown in preparation for surgery. Your anaesthetist will also visit you for an assessment prior to your general anaesthetic (going to sleep for your procedure).

### **Do I see my plastic surgeon before my operation?**

You will always see your plastic surgeon before your operation. We confirm the surgery plan and make sure you have no unanswered questions or concerns. Once you have confirmed you are happy to go ahead, we will ask you to sign a consent form unless you have done so already. We will then carefully draw important markings on your abdomen in planning for your surgery. We may also take clinical photographs of your markings for your medical records.

### **What does the operation involve?**

The procedure is usually performed under a general anaesthetic (with you asleep) as a day case procedure or with an overnight stay in hospital. Smaller mini-abdominoplasties may be performed under local anaesthetic. You will be given a time to arrive at the clinic or hospital and you should be fasted for at least 6 hours before surgery. This means that you cannot eat anything for 6 hours before your operation. You may, however, drink water during this time up to the specific time that you are instructed to.

If liposuction is planned, this will be performed as part of the abdominoplasty procedure itself, usually before the skin is removed. As outlined above, the abdominoplasty involves making an incision across the bottom of your abdomen and freeing the skin and fat away from the underlying muscle wall, all the way up to the middle of the rib cage. The tough tissue that lies on top of the muscles (the fascia) is then carefully stitched in a way that brings the muscles together. Additional fascial stitches may be placed to help further

contour the abdomen. As much as possible of the excess skin and fat is then removed and a new opening for the belly button is created. All the wounds are then carefully stitched and surgical tapes are placed on the wounds. Surgical drains are rarely used nowadays but if placed, these are usually left in for 24-48 hours. You will be put into a supportive surgical garment once the dressings are on.

### **How long does the surgery take?**

The operation itself takes between 2-4 hours depending on the extent and type of abdominoplasty that you are having and whether you are having liposuction or not. However, the whole process is longer than this, as it takes additional time to prepare for the general anaesthetic as well as prepare the operating theatre for your surgery and for you to wake up comfortably.

### **Will it be painful?**

Most patients describe a feeling of being “very tight” and uncomfortable in the initial post-operative period, but this rapidly improves. A feeling of tightness usually remains to some degree for 1-4 weeks after surgery. You will be given painkillers to take after the operation, and most people find them helpful to take for around 2 weeks following surgery. If you have had liposuction, there may be a dull ache and bruising in the areas of treatment.

### **What else can I expect after surgery?**

When in bed, the bed will be bent in the middle so your hips are flexed to take the tension off the wound. We encourage early mobilisation (gentle walking whilst stooping forward) as this is better for you, your surgical recovery and for reducing the risk of clots in your leg veins. On the same day as surgery, you will be helped out of bed and you will start to get used to making short walks, such as to the bathroom and back. Invariably, you will walk bent over as your abdomen will feel tight - it is important not to try and straighten up during the first week as this may put undue tension on the wound. Your posture will improve over the first week or two after surgery as your body adapts to its new shape.

You will have compression stockings on your legs that will have been fitted prior to surgery - it is vital that you keep these on and continue to wear them for 2 weeks after your operation. Compression stockings have an important role in minimising the chances of developing blood clots in the legs. You may also have pneumatic calf compression pumps fitted after surgery that will stay on until you are mobilising. You might also receive a blood-thinning injection on the evening of your surgery. Again, this is to reduce the risk of blood clots in your legs while you are less mobile immediately after surgery.

During your recovery in the clinic or hospital, the nurses will ensure that your post-operative garment fits properly and you are comfortable taking it off and putting it back on by yourself, in preparation for discharge home. If you are having difficulty in getting to the bathroom or passing urine after your operation, it may be necessary to insert a temporary catheter, so you do not have to get out of bed to pass urine (for 24 hours for example) but we try to avoid this if possible. Sometimes a catheter is inserted (and then removed) at the end of the operation before you wake up to ensure your bladder is empty when you wake up.

Another point to be aware of is that your abdomen has been tightened significantly, so your tummy will not be able to expand outwards after meals. Therefore, you may feel more bloated or full earlier than usual after eating, as your stomach will only be able to expand inwards. This may result in you needing to have smaller more frequent meals than usual, whilst your body adjusts to its new shape. Occasionally it can also reduce your ability to take very deep breaths for 24-hours or so after the operation. It is often a good idea to take some mild laxatives for a few days after surgery to soften your stools - this will prevent the need to strain and put further pressure on your abdominal wall.

### **When will I leave the clinic or hospital?**

Your abdominoplasty is usually planned as day case surgery (going home later the same day). If your abdominoplasty is being performed at the same time as other surgery, or if you have certain medical conditions, an overnight hospital stay may be planned. If used, surgical drainage tubes are usually removed the day after surgery. Loose clothing that is easy to pull on is best to wear along with flat comfortable shoes that are also easy to put on but secure in place once on. Your abdomen will be checked before discharge and if any additional instructions or aftercare are needed, this will be explained to you.

### **What should I do when I get home?**

Upon leaving the hospital or clinic, a series of outpatient appointments will be made for you with our nurses over the first 2 weeks for suture removal, wound checks and recovery checks. (See example schedule further down) and then with your plastic surgeon at 4 to 6 weeks. We have also put together a list of 'Dos and Don'ts' after abdominoplasty for you to follow.

## Dos and don'ts after surgery

There are several things that you can do to help speed up your recovery from surgery:

- Once you get home, you need to achieve a balance between taking things easy, but not lying down and doing nothing, as this may increase the risk of some complications. During the first week, we recommend that for every hour that you are awake, you gently walk for about 5 minutes stooping forward to take tension off your abdomen. As you recover, you will be able to increase the amount you do.
- You must continue to wear the post-surgery garment day and night for 6 weeks, taking it off for half an hour to one hour per day for showering.
- After surgery the wound will have been dressed with surgical tape. This is splash-proof and shower-proof (but not bath-proof). You will be able to shower from the day after surgery facing away from the shower hose (so as not to soak the tapes directly), and pat the tapes dry with a clean towel, kitchen towel or you can use a hairdryer on a cold setting to dry them.
- The umbilicus (belly button) is a common site of mild inflammation and therefore it is advisable to remove any dressing prior to showering and gently shower into the belly button itself every day. It must then be carefully dried before replacing a simple dressing. This will help reduce the risk of infection developing in this area. If it is not dried properly (aiming for it to be “bone dry”) wound healing problems can result.
- You should take short walks, ideally accompanied by someone, in case you feel unwell at any time.
- Sleep on your back, ideally elevated with an extra pillow or two behind your back and another pillow or two under your knees. A triangular pillow behind your back can be helpful for this.
- Avoid smoking, alcohol and stress, as these will all hinder the healing process.
- Analgesia or pain relief is often required at the beginning to manage the discomfort - initially with codeine-based medicines, and then paracetamol. Please follow our instructions regarding painkiller usage.
- It is important to drink plenty of fluids and eat a balanced healthy diet.
- Avoid aspirin, as this can increase your bruising and bleeding into the tissues.
- If sleeping is difficult after surgery, please let our specialist nurses or your plastic surgeon know so we can help and advise you about this.
- Generally, the most visible swelling and/or bruising is present for about 2 weeks. The swelling increases over the first 48 to 72 hours following surgery, stabilises, then generally subsides slowly, but can take up to 3 to 6 weeks to settle to discrete levels. Complete resolution of all swelling can take up to a year. The swelling and

bruising drifts down from the abdomen and may appear just below or to the side over the first 2 weeks and often one side can be more bruised and swollen than the other. Your mons pubis may be very swollen and bruised as a result of swelling drifting downwards. You need to be patient and give yourself time to heal.

- In addition, most patients experience a roller coaster of emotions, with good days and low days. It is quite normal to have the occasional day where you think: “what have I done?” and experience feelings of guilt and low self-esteem. It can often take some time coming to terms with the “new you”. Fortunately, this passes quickly, especially once you resume your normal daily activities and start going out a bit more.

Over the first week you will start to feel much more comfortable, and the pain will continue to subside. We recommend framing the feelings in your abdomen as tightness, rather than pain – this psychological nudge can help coping with the initial recovery period.

### **What about wearing my abdominal garment?**

Ideally your garment should be worn day and night for the first 6 weeks after surgery. However, everyone is different and some people vary the length of time they wear it for. It is important that your garment is not too tight - it should be firm but comfortable. As described above, the purpose of the garment is to minimise seroma formation (see below for more information on seroma) and to ensure the swelling to your abdomen resolves as quickly as possible. It is also advisable to open up the garment or take it off for an hour or so a day e.g. around the time that you have your shower.

### **What is the recovery period?**

Most people will be able to return to sedentary activity (i.e. an office job or light duties) at 2-3 weeks, depending upon how they feel. Heavier duties, or physical exercise should be postponed for at least 6 weeks after surgery, to allow the abdominal wall to heal properly. Very heavy core abdominal stressors or workouts should wait until 8 weeks after surgery.

It is not uncommon to have small areas of delayed wound healing, often where a dissolvable stitch has not dissolved quite as quickly as it should. These stitches may “spit” out of the wound (much in the same way as a splinter may start to work its way out of your finger after it has been there for a few days). This can be dealt with easily. If necessary, our nurses or your plastic surgeon can remove these spitting stitches in the outpatient clinic. Your umbilicus can also sometimes be slow to heal and meticulous wound care as above helps to allow it to heal as quickly as possible.

### **How long before daily activities may be resumed?**

As outlined above, you should avoid all heavy physical activity and contact sports for at least 6 weeks following the surgery. Driving should be avoided for 2 to 3 weeks and until you can comfortably brake quickly in the case of an unexpected emergency. Light exercise, such as gentle sessions on an exercise bike can be started at 4 weeks.

### **How can I get the best scar possible?**

At around 2 to 4 weeks after your operation, regular daily moisturising and massaging of the scars is important to help the scars to soften and mature as quickly as possible. This should be done twice a day or more once your tapes have been removed, until any redness disappears from the scar (which may take up to a year in some people). There are several creams and oils that may be used e.g. vitamin E cream, but the most important thing is to use an unperfumed product initially to avoid irritation of the scar. Once the belly button is healed, the scar around it should also be massaged in a similar manner. If the scar feels firm, it is important to be firm with your massage. Occasionally dilators are needed to stretch the umbilical scar.

In addition, silicone products (gels and tapes), which are available at Purity Bridge and most pharmacies, are an excellent additional means of ensuring good scars. These products are applied directly onto the scars and should be used for as near to 24 hours a day as possible. They will need to be used for several months to have a good effect.

### **Can anything help the swelling and general recovery?**

Following an abdominoplasty some people find the sensation in their abdomen uncomfortable and/or numb. Partly this is due to the retained fluid in the tissues causing some swelling, but it is also due to the nerves regrowing. Nerves regrow from the side of the abdomen towards the centre, in a downwards direction, so the part of the abdominoplasty that remains numb for the longest period is the area just above the pubic hair. Deep tissue massage and lymphatic drainage techniques can be used to help relieve some of the discomfort that may be experienced in this area.

### **How soon after the procedure may I have sexual intercourse?**

Ideally you should wait until 4 weeks after surgery before having sexual intercourse, to minimise the risk of damage to the area of surgery.

## Follow up and recovery timeline

We have put together an example timeline below of recovery milestones and follow up appointments after abdominoplasty surgery. Your individual schedule can vary from this, but it will give you a good idea of what to expect in the early recovery.

### Summary of typical timeline following operation

<b>Day of surgery</b>	<p>Review in Purity Bridge or the hospital by your plastic surgeon for surgical planning and surgery itself</p> <p>Start to gently mobilise stooping forward</p>
<b>Day 1 after surgery (if staying overnight)</b>	<p>Review in hospital by your plastic surgeon and discharge home</p> <p>Surgical drains removed if used</p> <p>Gentle shower with care of tapes and umbilicus cleaning</p>
<b>Week 1 after surgery</b>	<p>Nurse appointment to check on wounds and recovery</p>
<b>Week 2</b>	<p>Nurse appointment to check on recovery and removal of stitches around umbilicus if needed</p> <p>Start to stand and walk straighter</p>
<b>Week 3</b>	<p>Start to moisturise and massage wounds if not already doing so (should be continued until scars fade)</p> <p>Stand and walk with your back straight</p> <p>May start to drive (if comfortable, otherwise wait until week 4)</p>
<b>Week 4</b>	<p>Gentle low or no impact exercise may start</p>
<b>Week 4-6</b>	<p>Review with your plastic surgeon</p>
<b>Week 6</b>	<p>Exercise/heavy physical activity may gradually be started</p>
<b>Beyond 6 weeks</b>	<p>Longer term follow-up appointments will be arranged by your plastic surgeon to ensure you achieve the best possible outcome</p>

## **SIDE EFFECTS AND POTENTIAL COMPLICATIONS**

Before you decide to undergo abdominoplasty surgery, it is important that you are informed of the potential risks, complications and side effects. Complications may occur even with the best surgical care. For this reason, it is crucial that you carefully read and understand the following section.

After an abdominoplasty, there are side effects that are commonly experienced, as detailed below. In addition, unwanted and unforeseen complications may also happen. These too are discussed below.

### **Commonly experienced side effects after abdominoplasty surgery**

#### **Swelling**

This is normal following an abdominoplasty and reaches a maximum around 3 days following surgery before starting to settle down. Noticeable swelling usually lasts 3-6 weeks (occasionally 6 or 8 weeks in some patients) but it will be reducing gradually after the initial during the first week. Commonly, the swelling subsides at different rates on each side, which is quite normal and nothing to worry about. The final residual swelling can take 6 to 12 months to fully resolve.

#### **Alteration in skin pigmentation (discolouration and bruising)**

Bruising usually comes to the surface within a few days and then gradually resolves over 2 to 3 weeks. Very occasionally extensive bruising can take many weeks to totally resolve. These problems are more often seen in patients with thin, hypo-pigmented and transparent skin. Patients with darker complexions should be aware of the possibility of residual brown pigment being left behind if the bruising takes a long time to settle. Arnica may be helpful to settle bruising quicker.

#### **Loss of or increased sensation**

It is usual to have a reduction in skin sensation after an abdominoplasty surgery. This can particularly affect the central and lower abdomen. Feeling will usually return over a period of 3 to 12 months but can take longer. Unusual sensations can be experienced while skin sensation is returning. On rare occasions sensation can be increased and sensitive and this will slowly return to normal over a period of weeks to months.

#### **Time for internal abdominal organs to adjust**

Usually, it will take a few days for your bowel movements to return to normal after abdominoplasty surgery. You may notice also that you feel full quicker than usual. It is

important not to become constipated during this time as this will put additional pressure on your tummy and will be uncomfortable. This normally resolves in the early stages of recovery. Occasionally, your bowel may take longer than usual to return to working normally while it adjusts to the new tighter abdominal wall.

## **Complications**

### **Early complications (within the first week of surgery)**

#### **Bleeding (haematoma)**

Although extreme care is taken to minimise bleeding, occasionally a blood vessel will start to bleed after the operation producing a swelling or collection of blood (haematoma). The haematoma is usually noticed within the first 24-48 hours after surgery and usually requires further surgical exploration to drain the collection of blood and stop the bleeding. Untreated, a significant sized haematoma can affect healing or damage the overlying skin and affect the quality of your result. Very occasionally a blood transfusion is needed as well as treating the haematoma. Disclosure of all medications and supplements to us before surgery is important as some can increase bleeding and bruising after surgery. If there is any suggestion that bleeding or a haematoma into your abdomen has occurred after surgery, you will need to go back to the operating theatre to have the bleeding stopped and your abdomen washed out to evacuate the collected blood. Signs that a haematoma is developing include: the filling up of your drain bottle with blood, swelling of your abdomen, pain on one side and the development of severe bruising on your abdomen.

#### **Infection**

Infection rates in abdominoplasty are low, but if an infection develops it must be taken seriously. If this does not resolve quickly, you will require further surgery to wash out your abdomen and/or remove unhealthy tissue. In severe infections, abdominal tissue may be lost. This can result in contour irregularities, poor scarring, indentations and the need for future revision surgery.

#### **Blood clots**

Blood clots in the veins of the legs (DVT - deep venous thrombosis) may occur after abdominoplasty surgery, which is why important preventative measures are taken (compression stockings, pneumatic calf pumps and blood thinning injections while in hospital) and why we encourage early gentle mobilisation. You should continue to wear the calf compression stockings for 2 weeks after discharge from hospital. If a DVT does

develop, you will need investigations and treatment as appropriate. A pulmonary embolus (PE) describes a blood clot that has broken off from the DVT and lodged in the blood vessels in the lungs. This can be serious (at times, fatal), and again, appropriate investigations and treatment are instigated should this be suspected after your operation.

### **Damage to internal abdominal organs**

Abdominoplasty surgery is carried out on the surface skin, fat and muscle layers of the abdominal wall. Very rarely during abdominoplasty surgery or liposuction, the deeper layers of the wall are breached and in the worst case scenario the abdominal cavity is entered, and internal organs such as the bowel or bladder are at risk of damage. This is extremely rare but is more likely to happen if extensive scarring or a complicated hernia is present. In the unlikely event that this should happen, we would take steps to prevent or repair any damage. This may involve antibiotic treatment to prevent infection and involvement of a specialist colleague such as a general surgeon to assess or treat any internal damage – this might require transfer to another hospital for the further treatment. Even more rarely, sometimes the bowel can twist upon itself and require endoscopic treatment to return to its normal position.

### **Intermediate complications (within 6 weeks of surgery)**

#### **Delayed wound healing**

Uncommonly, in some people the wounds (both the main wound or the belly button) take longer to heal than in others: this may be due to having had a mild infection of the wound, due to a reaction with the stitches, from overdoing it straight after surgery, some medical conditions or medications, poor nutrition or for no specific reason other than human variation. Normally this is a minor inconvenience, which can be managed with dressings as an outpatient. Occasionally it can lead to a more severe infection developing as described above. The umbilicus (belly button) is the area most prone to delayed healing in a standard abdominoplasty and the umbilicus as well as the lower abdominal areas on each side of the vertical midline incision are the most vulnerable to this in a fleur de lis abdominoplasty.

#### **Suture spitting**

As described above, stitches (sutures) that are designed to dissolve sometimes do not dissolve as quickly as they are meant to. In these situations, there is a chance that they can work their way out of the wound and appear as sharp prickly filaments, occasionally

with a surrounding area of redness. Should this occur, it is nothing to worry about - any sutures that are spitting out of the wound can be removed in the clinic, and the wounds should then heal over these areas uneventfully. If not dealt with, it can result in a localised infection.

### **Seroma**

Normally wound fluid stops being produced by the body shortly after surgery. Sometimes, the body continues to produce this fluid for some time and the fluid can accumulate in the abdomen, known as a seroma. If this happens it may be uncomfortable and there is a chance that the fluid can become infected. Should you develop a seroma, it may be necessary for it to be drained. This involves a fine needle being passed into the abdomen and the fluid sucked out. The aspiration may need to be repeated on more than one occasion depending upon your situation and rarely may need further surgery to resolve it.

### **Skin loss (necrosis)**

Rarely loss of some of the central lower abdominal skin or of the umbilicus (belly button) skin occurs. If this occurs, it usually due to problems with the blood supply to the skin or infection. Should you be unlucky enough to have this happen to you, it may mean dressings and wound care for a longer than usual period of time or in more severe cases further surgery. This may result in a poorer scar than usual. The risk of this problem is significantly increased in smokers or nicotine use of any kind so you are always advised to stop smoking in advance of any planned abdominoplasty surgery and during the recovery period.

### **Fat necrosis**

In the same way as there may be some trouble with the blood getting to the umbilicus or abdominal skin to keep it alive, occasionally the same may happen to the fat in the abdomen. If this happens a pocket of fat may die – this is known as fat necrosis. If this happens to a small degree, it may just present as firm lumps in the abdomen. These will usually settle with time and massage. If you have more significant fat necrosis, you may produce an oily discharge from the wound. Depending on the degree of fat necrosis, this may either be managed with dressings and wound washouts in the outpatient setting, or if it is more severe, it may require a further surgery to washout the abdomen and can affect final shape and contour. In this worst-case scenario, several operations might be required to get your abdomen healed (refer to the section on infection above).

## **Late complications (more than 6 weeks from surgery)**

### **Asymmetry**

Everyone has a degree of asymmetry between right and left halves of the body. Sometimes certain asymmetries that were present, but less noticeable pre-operatively are revealed after abdominoplasty surgery e.g. your waist being higher on one side than the other or more fatty tissue on one side than the other or the umbilicus not being exactly midline in the centre of your abdomen (more to one side than the other). It is important to be aware of this possibility prior to undergoing surgery. Regarding the scar, although every effort is taken to make the scar as symmetrical as possible, the scar is often slightly different each side. This too must be appreciated prior to undergoing surgery. Further surgery is sometimes needed.

### **Scarring**

Abdominoplasty scars will fade, but this can take up to 1-2 years. Until then scars are often red and firm. As described above, regular scar massage and moisturising is important to help the scars mature and settle down as quickly as possible. Sometimes stretched, tender or lumpy scars can occur. Hypertrophic or keloid scars can occasionally occur – these are thickened and lumpy scars that are more common in people of Asian or Afro-Caribbean descent. The scar usually sits very low at the bottom of your abdomen but sometimes can be pulled higher in areas due to differences in tissue elasticity, tension or scarring. Small asymmetries in scar level or thickness have to be accepted as part of the normal healing process.

### **Recurrence of loose skin**

As your recovery takes place, your abdominal wall tissues (skin, muscle) gradually soften. This is a normal part of recovery. In some situations, a degree of recurrence of loose skin may occur. This is more likely in thin or very stretched skin with poor tone or when surgery has taken place after significant weight loss. If you have a lot of stretch marks, it is likely that not all of these will be able to be removed during your abdominoplasty. The skin tone in stretched skin such as skin with stretch marks is low and can result in a degree of loose skin or irregularities in the areas where the stretch marks remain. This can also happen in the mons pubic region.

### **Recurrence of muscle bulge or hernia**

As your recovery takes place, your abdominal wall muscles gradually soften. This is a normal part of recovery. In some situations, a degree of recurrence of muscle bulge or a hernia may occur. This is more likely when you have had a very wide gap between your

recti abdominus muscles (6-pack muscles) or when you needed to have a hernia repaired as part of the abdominoplasty. Rarely further surgery to retighten the muscles or to repair a hernia may be needed and it may be necessary to place a mesh to reinforce the tissue repair. At times, your plastic surgeon will ask a general surgery consultant colleague to be involved in this type of surgery,

### **Chronic pain**

Occasionally patients suffer from chronic pain after body contouring surgery. This is not always predictable or easily treated. It is more likely to occur if you suffer from severe or complex pain prior to your surgery. Further surgery or referral to a pain specialist may be indicated in this situation although it must be appreciated that there is not always a surgical solution to chronic pain.

### **Labial upward pull**

The mons pubis is pulled upwards as part of the abdominoplasty. Normally this is beneficial for overall contour as it incorporates a mons lift into the abdominoplasty. Occasionally, this can overpull and distort the labia just below.

### **The sub-optimal result**

Despite removing and tightening the amount of tissue planned at abdominoplasty surgery, some patients will feel their abdomen is not exactly as they were hoping it would be. For example, this could be due to residual fullness in the upper abdomen, or excess tissue around the flanks or a stretched or puckered scar. The limitations of abdominoplasty mean that it may occasionally be necessary to undergo further procedures to improve the surgical result - these further operations will incur a further cost in most situations. Examples of further surgery include scar revision, reverse abdominoplasty, liposuction, flank lifts, back lifts and surgery to the mons pubis area. These further surgeries will inevitably incur further costs. You will be spoken to frankly at your initial consultations to discuss what limitations an abdominoplasty may have in your specific circumstances, and which type of abdominoplasty best fits your abdomen and surgery goals. It is crucial that you know what you can (and cannot) expect from an abdominoplasty prior to undergoing surgery.

## **Other points about abdominoplasty surgery**

### **Future pregnancies (women)**

With any future pregnancies, the same changes to your body will occur as they would have done without any surgery. Therefore, any changes in size and change to your abdomen that would normally occur during pregnancy, will continue to happen. After your pregnancy is over, your abdomen will again undergo the same changes that it normally would after a pregnancy. This can mean some residual stretched skin and/or an overhang of tissue compared to your pre-pregnancy abdomen i.e. some undoing of the effect of abdominoplasty surgery.

### **Significant changes in weight**

With any significant gain or loss of weight, your abdomen will gain or lose weight as it would normally. This will change the size and shape of your abdomen as would have happened before your surgery. It can undo or alter the effect of an abdominoplasty particularly in the case of weight gain.

### **Maintenance of results**

Maintaining a steady weight and a healthy weight for your body type and height as well as good core muscle strength and tone will help you get the best result possible from your abdominoplasty surgery. While you will be restricted in the type and extent of activity that you can do during the recovery period, once recovered these restrictions will be lifted. Taking regular exercise and in particular core muscle exercises such as those done during Pilates will maintain a better body contour over the long term.

### **Unhappiness with abdominal shape**

Although abdominoplasty surgery will remove the excess skin from the abdominal region and tighten the abdominal muscles there is no guarantee that it will give you a flat tummy. Overall abdominal shape is governed not only by the skin but also by underlying muscle tone (for which you can do exercise to improve) and the amount of fat stored by the body inside the abdomen. At the upper end of the abdomen, prominent or flaring ribs can affect the abdominal shape below this. At the lower scar there may be a step off between the thin skin of the groin region (which has little in the way of subcutaneous fat) and the skin of the upper portion of the abdomen which has been moved down. This skin has a much greater thickness of underlying fat and whilst if liposuction has been included in the surgery it will help to reduce any mismatch there is no guarantee that a step off will not be present after surgery.

## **Limitations of results**

While abdominoplasty surgery is very good at removing excess skin and improving the shape and contour of the abdomen, there are some limitations to the results that can be achieved. If you are overweight, have a lot of internal body fat (which cannot be removed as part of an abdominoplasty), have a significant hernia or have had significant previous abdominal surgery, the end result may not be as flat or as contoured an appearance as that in a very slim patient with no complicating factors. A longer scar may also be needed to perform the surgery. Individual body shape also impacts on the end result. Different body shapes e.g. hourglass, pear, apple or straight will get different results with an abdominoplasty surgery. It is particularly important to understand this when looking at before and after photographs of patients who have undergone abdominoplasty surgery.

## **CONCLUSIONS**

Overall, most patients are delighted with the results of their surgery. They find they can wear clothes they may never have been able to wear before and enjoy exercise including swimming and beach activities that they were too self-conscious to before! We hope this information has helped you to understand what abdominoplasty can achieve and what is involved.