

# **Use of compression garments after major abdominal surgery: a patient satisfaction survey of SRC SurgiHeal**

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## Abstract

### *Introduction*

Compression garments are an established adjunctive therapeutic modality used in medicine and surgery for a range of conditions such as wounds and ulcers, oedema, deep vein thrombosis and varicose veins. They are also used to improve sports performance and recovery. It is known that after major abdominal surgery, compression garments can help with early mobilisation to reduce the risk of thromboembolic complications and assist with pain management.

SRC Health developed a compression garment suitable for men and women specifically for use after abdominal surgery. The garment incorporates specific design and construction elements that are patented.

As part of an ongoing research and development program, SRC Health conducted an online patient satisfaction survey with three primary aims: to provide insight into the quality of the garments; to provide preliminary information about potential areas for garment improvement; and to more fully appreciate clinical effectiveness.

### *Methods*

An online survey was developed for which there were 21 respondents, 17 women and four men aged from 25 years to more than 75 years. Subjects were recruited peri-operatively by treating physiotherapists or surgeons. SRC Health supplied the garment and sent the questionnaire to the subjects.

### *Results*

Respondents underwent a variety of abdominal surgery including hernia repair and laparotomy. Of the 21 respondents, 12 (63%) wore SRC SurgiHeal with high waist (up to the breastbone), seven (37%) wore the SRC SurgiHeal with regular waist (up to the belly button). Eighty-five per cent (85%) reported the garments were extremely comfortable or very comfortable. A further 15 % reported the garment as moderately or slightly comfortable.

Eighty per cent (80%) reported the recovery garments were easy to put on and take off and 95% reported the garments provided adequate support for their wounds. Eighty-four per cent (84%) reported the garments were extremely effective or very effective at decreasing wound pain. Significantly, 70% reported requiring less pain-relieving medication while wearing the garments.

Seventy-five per cent (75%) of people thought it was easier to get in and out of bed while wearing the garment and 55% wore the garments between six and 16 hours per day and 25% for between 17 and 24 hours per day.

All (100%) of the respondents reported that wearing the garments made it easier for them to perform daily activities. All (100%) of the respondents stated they would recommend the garments to others having an abdominal procedure.

### *Conclusion*

These results show the SurgiHeal garments were able to decrease pain and improve mobility and this is consistent with a previous report for abdominal binders.

The majority of people who responded to the survey found that the SurgiHeal compression garments were comfortable, helped to decrease pain from their wounds and allowed them to perform more simple daily tasks after major abdominal surgery. The benefits as reported provide additional support for the expanded use of compression garments post-abdominal surgery.

## Introduction

People who have had major abdominal surgery (MAS) are at increased risk of immobility and pain, with the immobility consequently increasing the risk of venous thromboembolism and pulmonary morbidity (Cheifetz et al., 2010).

It is known that after MAS, compression garments (CGs) can help with early mobilisation to reduce the risk of thromboembolic complications and assist with pain management.

Elasticised abdominal binders have been recommended after MAS to provide circumferential support that potentially reduces incisional stress and pain and increases mobility (Cheifetz et al., 2010).

CGs are an established adjunctive therapeutic modality used in medicine and surgery for a range of conditions such as wounds and ulcers, oedema, deep vein thrombosis (DVT) and varicose veins (MacRae et al., 2011). They are also used to improve sports performance and recovery (MacRae et al., 2011).

In general, the therapeutic action of compression in these settings is thought to be through the application of mechanical pressure to support or stabilise underlying tissues. CGs can have positive physiological impacts in DVT management (Ramelet, 2002) and improve healing time of venous leg ulcers (O'Meara et al., 2012).

SRC Health has developed a CG suitable for men and women specifically for use after abdominal surgery. The garment incorporates specific patented design and construction elements. The function of these garments has been developed through innovation in design and manufacture (patented). It is thought that excessive or inappropriate compression can deactivate muscles, resulting in potential adverse effects. A core component of the SRC design is to facilitate appropriate muscle activation until the abdominal muscles are healed.

As part of an ongoing research and development program, an online patient satisfaction survey was developed which had three primary aims: to provide insight into the quality of the garments; to provide preliminary information about potential areas for garment improvement; and to more fully appreciate clinical effectiveness.

## Methods

An online qualitative patient satisfaction survey was developed for administration on SurveyMonkey for people using either the SRC SurgiHeal with high waist (up to the breastbone) or the SRC SurgiHeal with regular waist (up to the belly button) (Table 1).

Peri-operative recruitment was ongoing and performed by treating physiotherapists and obstetricians. Inducements were not offered to patients for participation. SRC Health supplied the garment and sent the questionnaire to the subjects. Results were entered into SurveyMonkey.

Twenty-one people (17 women and four men) gave consent and responded to the survey between February and November 2015. All data was de-identified and provide qualitative information about the use of the garments.

The respondents did not have to answer every question and were able to skip questions. Results from de-identified questions and questions with few responses are not included in this report.

## Results

Of the 21 respondents, 12 (63%) wore SRC SurgiHeal with high waist (up to the breastbone), seven (37%) wore the SRC SurgiHeal with regular waist (up to the belly button) and two skipped the question. Of the 20 who answered, 30% reported the garments were extremely comfortable, 55% very comfortable, 10% moderately comfortable and 5% slightly comfortable.

Eighty per cent (80%) of people reported the garments were easy to put on and take off and 95% reported the garments provided adequate support for wounds from MAS. Eighty-four per cent (84%) reported the garments were extremely effective or very effective at decreasing wound-related pain (Figure 1) and 70% reported requiring less pain relieving medication while wearing the garment.

Seventy-five per cent (75%) of people thought it was easier to get in and out of bed while wearing the garment.

Fifty-five per cent (55%) wore the garments between six and 16 hours per day and 25% for between 17 and 24 hours per day (Figure 2).

Some customers suggested improvements that they believed would make the garments more comfortable. One customer suggested the addition of Velcro and another shoulder straps.

One indicated the waist was too tight but that the garment supported the wound “extremely well”.

One customer reported that the garment did not fit and was too high in the waist. The customer stated that they thought they were too short for the garment (155 cm tall) – this customer was wearing an XXL-sized, high-waist garment. Nonetheless, this customer still stated that the garment helped with daily living and said that they would recommend the garment.

All (100%) of the respondents reported that wearing the garments made it easier for them to perform daily activities and all (100%) stated they would recommend the garments to others having an abdominal procedure.

## Discussion

The patient satisfaction feedback shows that in the majority of cases, the CGs worn after MAS were comfortable and helped to reduce pain and provided support for the wound. Most people found the garments comfortable and wore them for many hours each day. Everyone wearing the garments found that performing everyday activities was more comfortable.

Four patients used the option for freehand feedback to suggest improvements or identify problems with fit. More detailed analysis of these types of issues would be needed to determine if these problems were caused by an incorrectly sized garment being worn or for some other reason. One of these patients reported not liking the garment as “the waist was too high”. This individual was wearing the high-waist garment and may have been more comfortable in the regular-waist garment. In all four cases, the customers reported benefits from wearing the garments and still recommended the garments.

This patient feedback survey is limited by the qualitative nature of the survey and the resultant inability to perform statistical analysis. Nonetheless, the rate of satisfaction was extremely high, with all respondents stating their mobility and everyday life was improved and 100% stating they would recommend the garment.

This work adds to the existing literature supporting the use of CGs post MAS. Further controlled trials to examine the effectiveness of CGs after MAS will enable more detailed analysis of the effectiveness of such modalities.

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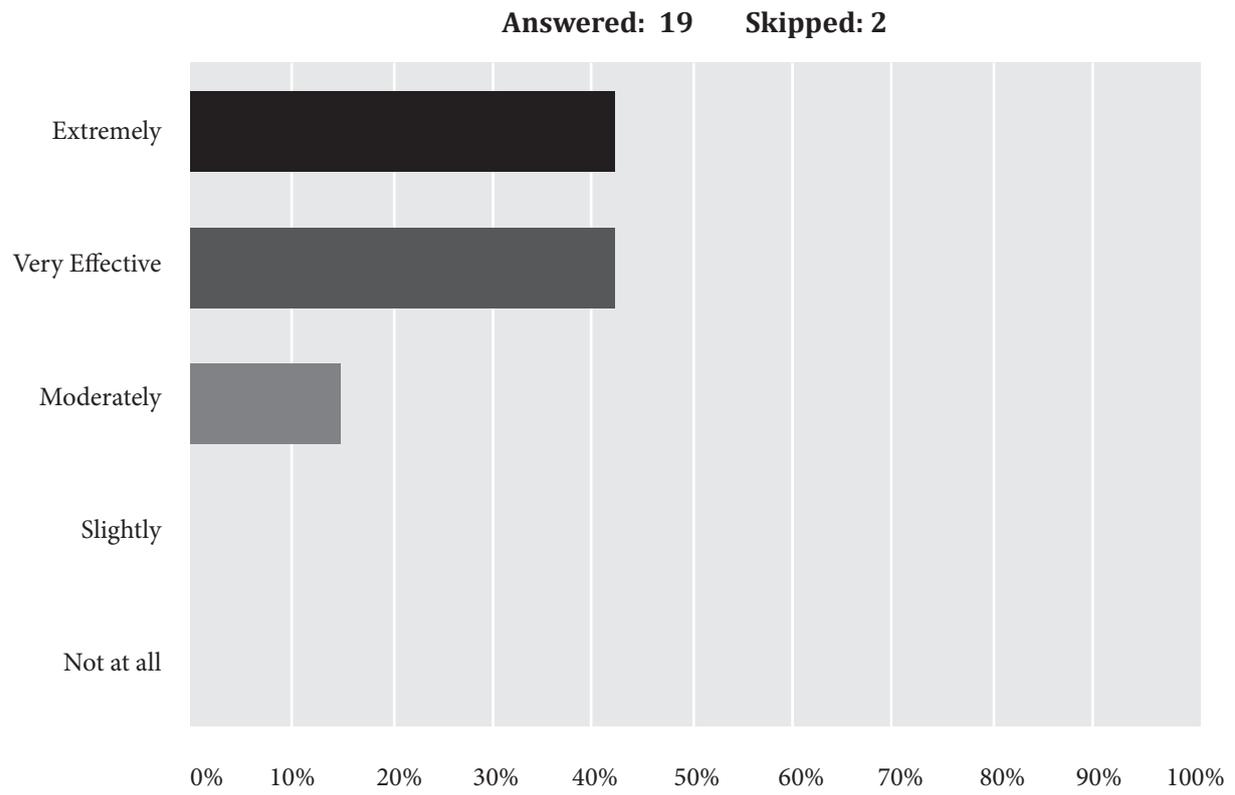
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**Table 1: Patient satisfaction survey questions**

1. What is your name?
2. Who was your referring doctor or physio?
3. At which hospital or physio practice have you undergone treatment or a surgical procedure?
4. What state/territory do you currently live in?
5. What is your age?
6. What is your gender?
7. Have you had any previous abdominal surgery?
8. If you answered YES, did you wear a support garment within 2 days of that surgery?
9. If you wore a garment, please indicate the brand and type of garment.
10. Thinking back when you wore the garment/product, how comfortable was that garment/product to wear?
11. Thinking back when you wore that garment how effective was the garment/product in reducing wound discomfort?
12. What type of surgery did you undergo?
13. Which type of SRC SurgiHeal garment are you trialing?
14. What size garment are you wearing?
15. How comfortable is the SRC garment to wear?
16. Is the SRC garment easy to get on?
17. Is the SRC garment easy to get off?
18. Do you feel that there is adequate support/compression for your wound areas?
19. How effective in your opinion is your SRC garment at reducing wound discomfort?
20. If you had an inguinal hernia repair, was there adequate support for your groin (testes) area?
21. In your opinion have you required less pain killer medication because of wearing the garment?
22. Do you find it easier getting in and out of bed whilst wearing this garment?
23. How many hours per day on average do you wear this garment?
24. Would you recommend this garment to others having an abdominal surgical procedure?
25. Do you have improved mobility to perform simple daily living tasks while wearing the garment?
26. Please provide any additional comments ....

**Figure 1: Effectiveness of decreasing wound pain after major abdominal surgery**



**Figure 2: Hours per day people wear the compression garment after major abdominal surgery**

